Annual Processing Review Number

AMERICAN

DYESTUFF REPORTER

Volume 45 | December 3, 1956 | Number 25

Alphabetical List of **NEW PRODUCTS**

Developed Since November, 1955

Chemicals ..... **Page 879**
Coloring Materials ..... **Page 888**
Equipment ..... **Page 899**

WITH the co-operation of manufacturers of dyestuffs, textile chemicals, and wet processing and laboratory equipment, we have prepared the accompanying list of products which, it is understood, have been placed on the market or further developed since November, 1955. The list of products has been subdivided according to the classifications mentioned and the individual products are listed in alphabetical order (except for Equipment). The name of the manufacturer, in an abbreviated form, appears directly below the name of the product. In many cases the abbreviated name of the manufacturer will immediately indicate to the reader the full name of the company. However, below we have listed alphabetically the key name of the manufacturer together with the complete firm name and address.

We have tried to make this list as complete and accurate as possible but there may be some unintentional omissions or errors. If so, we shall be pleased to have such matters brought to our attention immediately. We have depended upon the manufacturers to supply us with a complete list of their new products together with information concerning them. The properties claimed for these products are those claimed by the manufacturers. The information which we publish is necessarily in a brief form inasmuch as lack of space prohibits the publication of complete details concerning any product. We hope, however, that the information as it appears is sufficiently comprehensive to give the reader a specific idea of the properties and intended uses of the product.

KEY TO MANUFACTURERS' NAMES

ACETO—Aceto Chemical Co, Inc, 40-40 Lawrence St, Flushing 54, N Y

AMALGAMATED—Amalgamated Chemical Corp, Rorer and Ontario Sts, Philadelphia 34, Pa

AMERICAN ANILINE—American Aniline Products, Inc, 50 Union Sq, New York 3, N Y

ANSBACHER-SIEGLE—Ansbacher-Siegle Corp, Rosebank, Staten Island, N Y

ANTARA—Antara Chemicals, a sales division of General Aniline & Film Corp, 435 Hudson St, New York 14, N Y

ARKANSAS—Arkansas Co, Inc, P O Box 210, Newark 1, N J

ARNOLD, HOFFMAN—Arnold, Hoffman & Co, Inc, 55 Canal St, Providence 1, R I

ASKANIA—Askania Regulator Co, Subsidiary of General Precision Equipment Corp, 240 E Ontario St, Chicago 11, Ill

ATLANTIC—Atlantic Chemical Corp, 153 Prospect St, Passaic, N J

ATLAS—Atlas Color & Chemical Co, Inc, 60 K St, King Terminal, South Boston 27, Mass

AULA—Aula Chemicals, Inc, P O Box 494, 714 Division St, Elizabeth, N J

BAKER—J T Baker Chemical Co, Phillipsburg, N J

BERKSHIRE CORP—Berkshire Color & Chemical Corp, Springfield, Mass

BIRCH—Birch Bros, Inc, 32 Kent St, Somerville 43, Mass

BORDEN—The Borden Co, Chemical Div, 350 Madison Ave, New York 17, N Y

BRYANT—Bryant Chemical Corp, 6 North St, North Quincy 71, Mass

BURKART-SCHIER—Burkart-Schier Chemical Co, Chattanooga, Tenn

CARBIDE AND CARBON—Carbide and Carbon Chemicals Co, A Division of Union Carbide and Carbon Corp, 30 East 42nd St, New York 17, N Y

CIBA—Ciba Co, Inc, 627 Greenwich St, New York 14, N Y

COLGATE—Colgate-Palmolive Co, 300 Park Ave, New York 22, N Y

CONCO—Continental Chemical Co, 195 21st Ave, Paterson, N J

COOK-P & N—Cook-P & N Machine Co, Inc, 365 Dorchester Ave, Boston 27, Mass

CUSTOM SCIENTIFIC—Custom Scientific Instruments, Inc, 541-543 Devon St, Kearney, N J

CYANAMID—DYESTUFF—American Cyanamid Co, Dyes Dept, Bound Brook, N J

DOW—The Dow Chemical Co, Midland, Mich

DEXTER—Dexter Chemical Corp, 819 Edgewater Rd, New York 59, N Y

DuPONT—E I du Pont de Nemours & Co, Inc, Wilmington, Del

EMERY—Emery Industries, Inc, Cincinnati 2, O

EMKAY—Emkay Chemical Co, 319-325 Second St, Elizabeth, N J

FEELEY—E J Feeley Co, 650 State St, Charlotte, N C

FRANCOLOR—Francolor Inc, Division of Campagnie Francaise des Matieres Colorantes, R I Trust Bldg, Woonsocket, R I

GALLOWHUR—Gallowhur Chemical Corp, N Water St, Ossining, N Y

GARMENT FINISHING—Garment Finishing Equipment Corp, 18 Brattle St, Cambridge 38, Mass

GEIGY—Geigy Dyestuffs Div of Geigy Chemical Corp, Saw Mill River Rd, Ardsley, N Y

GENERAL DYESTUFF—General Aniline & Film Corp, Dyestuff & Chemical Div, 435 Hudson St, New York 14, N Y

GLOBE—Globe Compound Co, Inc, Waterbury-Bristol Rd, Waterbury 12, Conn

GOODYEAR—Chemical Div, The Goodyear Tire & Rubber Co, Inc, Akron 16, O

GOTHAM—United States Gauge Division of American Machine and Metals, Inc, Sellersville, Pa

HART—The Hart Products Corp, 1440 Broadway, New York 18, N Y

HOUGHTON—E F Houghton & Co, 303 West Lehigh Ave, Philadelphia 33, Pa

INDEPENDENT—Independent Chemical Corp, 70-30 79th Place, Glendale, Brooklyn 27, N Y

INTERCHEMICAL—Interchemical Corp, Textile Colors Div, Hawthorne, N J

KALI—Kali Manufacturing Co, 427 Moyer St, Philadelphia 25, Pa

LAUREL—Laurel Soap Manufacturing Co, Inc, Tioga, Thompson and Almond Sts, Philadelphia 34, Pa

LEWIS-SHEPHERD—Lewis-Shepherd Products, Inc, Watertown, Mass

LUNKENHEIMER—The Lunkenheimer Co, Beekman St and Waverly Ave, Cincinnati, O

MANTON-GAULIN—Manton-Gaulin Mfg Co, Inc, Everett 49, Mass

METRO-ATLANTIC—Metro-Atlantic, Inc, Centredale 11, R I

METRO DYESTUFF—Metro Dyestuff Corp, West Warwick, R I

MONA—Mona Industries, Inc, Paterson 4, N J

MORETEX—Moretex Chemical Products, Inc, 314 W Henry St, Spartanburg, S C

MORNINGSTAR, NICOL—Morningstar, Nicol, Inc, 630 W 51st St, New York 19, N Y

NATIONAL—National Aniline Division, Allied Chemical & Dye Corp, 40 Rector St, New York 6, N Y

NATIONAL CARBON—National Carbon Co, 30 E 42nd St, New York 17, N Y

NATIONAL DRYING—The National Drying Machinery Co, Lehigh Ave and Hancock St, Philadelphia 33, Pa

NAUGATUCK—Naugatuck Chemical Div, U S Rubber Co, Naugatuck, Conn

NOVA, NOVA-BASF, NOVA-ROHNER—Nova Chemical Corp, 153 Waverly Place, New York 14, N Y. BASF—products of Badische Anilin & Soda Fabrik AG. ROHNER—products of Rohner Ltd, Pratteln, Switzerland

NYANZA—Nyanza Color & Chemical Co, Inc, 109 Worth St, New York 13, N Y

ONYX—Onyx Oil & Chemical Co, Warren & Morris Sts, Jersey City 2, N J

ORGANIC—Organic Chemical Corp, P O Box 432, Providence 1, R I

PHARMA—Pharma Chemical Corp, 175 Fifth Ave, New York 10, N Y

PHOTOVOLT—Photovolt Corp, 95 Madison Ave, New York 16, N Y

PIONEER—Pioneer Chemical Works, Inc, 940 N Delaware Ave, Philadelphia 23, Pa

PROCTER & GAMBLE—The Procter & Gamble Co, Cincinnati 17, O

PROGRESSIVE—Progressive Color and Chemical Co, 350 Fifth Ave, New York 1, N Y—representatives of Farbwerke Hoechst AG, Frankfurt (M)—Hoechst, West Germany

QUAKER—Quaker Chemical Products Corp, Conshohocken, Pa

REFINED—Refined Products Corp, Lyndhurst, N J

ROHM & HAAS—Rohm & Haas Co, Washington Sq, Philadelphia 5, Pa

ROYCE—Royce Chemical Co, Carlton Hill, N J

SANDOZ—Sandoz Chemical Works, Inc, 61-63 Van Dam St, New York 13, N Y

SCOTT—Scott Testers, Inc, 63 Blackstone St, Providence, R I

SEYDEL-WOOLLEY—Seydel-Woolley & Co, Box 36, Sta D, Atlanta, Ga

SOLUOL—Soluol Chemical Co, Inc, Natick, R I

STANDARD CHEMICAL—Standard Chemical Products, Inc, Hoboken, N J

TANATEX—The Tanatex Corp, Belleville Turnpike, Kearney, N J

TAYLOR—Taylor Instrument Companies, 95 Ames St, Rochester 1, N Y

TURBO—Turbo Machine Co, Lansdale, Pa

VIKON—Vikon Chemical Co, 1384 Massachusetts Ave, Cambridge 38, Mass

VIRGINIA SMELTING—Virginia Smelting Co, West Norfolk, Va

WARWICK—Warwick Chemical Co, a Division of Sun Chemical Corp, Wood River Junction, R I

WICA—Wica Chemicals, Inc, P O Box 506, Charlotte, N C

ACCOFIX #4
(Amalgamated)

A product designed to fix direct colors. It is colorless, readily soluble in water, and is said to impart a high degree of washfastness. Inexpensive to use, it is applied as the final treatment before drying of the fabric.

ACETOACET-o-ANISIDIDE
(Carbide and Carbon)

$CH_3COCH_2CONHC_6H_3OCH_3$. A crystalline solid. M W, 207.22; Sp G, 1.1320 at 86.6/20° C; M P, 86.6° C; Fl P (open cup), 325° F; color, white. Chemical properties: undergoes numerous condensation and substitution reactions that characterize compounds containing reactive carbonyl and methylene groups. Suggested uses: a valuable intermediate in the manufacture of Hansa Yellow and Benzidine pigments of improved light-fastness. Availability: commercial quantities.

ACRI-NYL DRY SIZE
(Morningstar, Nicol)

Slashing compound for cotton blends with the hydrophobic synthetics such as Acrilan, Dacron, nylon.

ACRYSOL* ASE-60
(Rohm & Haas)

An acrylic emulsion copolymer containing 28% solids, developed as a thickening agent, particularly applicable for viscosity adjustments of thermoplastic resin formulations utilized for back-coating rugs and upholstery fabrics. It is also effectively used for the suspension of pigments and fillers. It is stated that its salt solutions, similar to those of natural gums or water soluble cellulose derivatives, offer high thickening power at low solids with ease of handling and low cost.

*Registered trade-mark

ACRYSOL* ASE-75
(Rohm & Haas)

An acrylic emulsion copolymer containing 40% solids which is said to be a highly efficient thickening agent for natural and synthetic latex compounds. Salts of Acrysol ASE-75 are effectively used as dispersants and suspending agents for inert fillers, starches, and other aqueous suspensions. It is stated that, for the first time, the advantage of high solids at low viscosity in emulsion systems is combined with many of the interesting properties of acrylic water-soluble polymers.

*Registered trade-mark

ACRYSOL* P-4
(Rohm & Haas)

A warp sizing agent for Dacron which is said to provide a tough, flexible, soft and protective film for high loom efficiency and fabric quality. It is stated that it will not corrode conventional processing equipment and may be readily removed in subsequent scouring operations.

*Registered trade-mark

AHCO* FINISHING OIL 280
(Arnold, Hoffman)

A high grade textile finishing oil. It is also highly recommended by the manufacturers for preventing warps from sticking to the dry cans during slashing. For this purpose, it is used at a ratio of 1 pint to 200 gallons of size mix.

*Registered trade-mark

AHCOL* 475
(Arnold, Hoffman)

A replacement for sulfonated olive oil. It is said to possess excellent solubility and will not oxidize or develop rancidity. Ahcol 475 is used in dyeing operations as a lubricant, and it is used either alone or in conjunction with other agents for finishing cotton, silk or rayon.

*Registered trade-mark

AHCO-SEAR BOA
(Arnold, Hoffman)

A burn-out agent which is applied to cellulosic fabrics by printing techniques. After its application, the fabric is dried, cured and brushed,—the final result being that fabric destruction occurs where the Ahco-Sear BOA was originally applied. Novelty effects are possible by printing Ahco-Sear BOA on fabrics containing both cellulosic and synthetic fibers.

AHCOVEL* X57
(Arnold, Hoffman)

Cationic, substantive Ahcovel X57 is a fluid, easily dispersible paste. It is claimed to be a remarkably versatile product, showing superior softening properties on cotton, rayon, nylon, Orlon, Dacron. It is compatible with most resin catalysts. Low chlorine retention, low foaming properties, and high crease resistance are also listed among the desirable properties of Ahcovel X57.

*Registered trade-mark

ALGEPON BS
(Arkansas)

Primarily a stripping assistant for fabrics which have been dyed with vat dyes. It is also used as a leveling or retarding agent in vat dyeing. Algepon BS is easy to use in that it is a liquid product which may be added directly to the stripping bath without premixing in hot water. For stripping vat colors, Algepon BS is used in the conventional caustic soda-sodium hydrosulfite bath at 175° to 180° F, and a satisfactory result is usually obtained by processing for 30 to 40 minutes at this temperature.

"ALKANOL"* CRUDE SOLUTION
(Du Pont)

An aqueous solution of an alkyl naphthalene sulfonate. This product is said to be an effective anionic wetting and dispersing agent and to be particularly suited to use where the development of foam would be undesirable.

*Registered trade-mark

"ALKANOL"* HC SURFACE ACTIVE AGENT
(Du Pont)

A nonionic product especially recommended by the manufacturers for promoting the level application of disperse dyes to "Dacron" polyester fiber.

*Registered trade-mark

"ALKANOL"* HCS SURFACE ACTIVE AGENT
(Du Pont)

A nonionic surface-active agent based on an ethylene oxide condensate of high molecular weight fatty alcohol. The properties of "Alkanol" HCS suggest its use as a retardant and leveling agent in dyeing processes, a detergent, a fulling assistant in acid media, and as an emulsifying and dispersing agent of general utility.

*Registered trade-mark

ALUMINUM FORMATE
(Aceto)

A free flowing white powder used as a waterproofing agent, mordant, and dyeing assistant.

AMINOETHYL HYDROGEN SULFATE
(Carbide and Carbon)

$H_2NCH_2CH_2OSO_2OH$. A crystalline, slightly hygroscopic powder. M W, 141.15; M P, starts to sinter at 274° C and darkens without completely melting at 280° C; sol in water, 10-11% by wt at 20° C; color, white. A convenient source of ethylene imine, by distillation from sodium hydroxide, or for reaction in situ. Suggested uses: intermediate for resins used in wet-strengthening treatment of paper; modification of cellulosic materials to improve dyeability; manufacture of ethylene imine reaction products and polymeric materials useful as wetting or leveling agents, plastics, synthetic fibers, adhesives, rubber accelerators and antistatic agents. Availability: experimental quantities.

ANTISTATIC W
(Quaker)

Substantive formulation for reduction of static in wool and synthetic fibers to a minimum. This product is effective in very small quantity, and is said to retain its effect through many washings or dry cleanings. It imparts softness in its own right, but many users prefer application in conjunction with cationic softeners.

ARCTIC SYNTEX 036
(Colgate)

A 100% nonionic surface active agent, which is said to be useful where efficient wetting, penetrating, emulsifying, and cleaning is desired. It is stated that, because it is stable in hard or soft water, compatible with anionic, cationic, and other nonionic agents and extremely effective at low concentrations, Arctic Syntex 036 can be used in almost every operation where wetting and surface activity is desired.

ARCTIC SYNTEX M LIQUID
(Colgate)

A neutral synthetic detergent formulated to contain no added alkalies, which is said to be ideally suited for textile applications where wetting and penetration is desired. It is stated that Arctic Syntex M Liquid, being economical to use, produces foam in any type water and its special ingredients make suds stand up and hold soil and grease in suspension longer. Arctic Syntex M Liquid finds application in such operations as scouring, bleaching, dyeing, backwashing, filling, degumming, and wetting.

ARKOLUBE SIL
(Arkansas)

A silicone lubricant which is used primarily to improve sewability of fabrics which are treated with resins. In many cases it also improves tear strength and abrasion resistance, but does not impart water repellency. It is used by adding small amounts directly to the resin bath in the finishing of cotton and other fabrics, and, it is stated, in most cases the use of 0.75% to 1.% has been found to produce a marked improvement in sewability. In physical appearance, Arkolube SIL is a white stable emulsion which is said to have excellent storage characteristics. It is commonly used in connection with a combination of thermosetting and acrylic resins in producing so-called "wash and wear" finishes on cotton fabrics.

AROGUMS
(Morningstar, Nicol)

A series of chemically modified potato starches covering a complete range of fluidity and said to possess greater viscosity stability, quicker cooking, better luster, flexibility and retention. Used in textile finishing principally for stiffening, binding, flexibility.

ASTON D
(Onyx)

A durable antistatic finish for synthetic fibers. The product is supplied as a 50% aqueous solution. It is said to be durable to washing with soap or detergent, and to dry cleaning with any of the commonly used solvents. It is particularly effective for fabrics woven from polyester fibers. It is stated that it does not impair the mechanical properties of the fabric, and does not discolor whites.

ASTON LT
(Onyx)

A permanent antistatic finish for synthetic fibers. The product is supplied as a 20% active aqueous solution, with a liquid curing agent. It imparts antistatic properties to synthetic fibers, and is said to remain effective through any number of launderings or dry

cleanings. It is further said to be equally resistant to soap and detergent washing and to all types of dry cleaning solvents. It is easy and economical to apply. It is stated that Aston LT is equally effective for any synthetic fiber (polyamides, polyesters, vinyls, acrylics), and for triacetates. It is effective for fabrics of any construction: fabrics woven from continuous filament or spun yarn, knitted and pile fabrics. It does not impair the mechanical properties of the fabric.

ATCO GS-14
(Metro-Atlantic)

A 20% active emulsion of 2,2 dihydroxy dichloro diphenyl methane. It is said to be an extremely effective fungicide. The product is compatible with all of the common wax base water repellents and, it is stated, it can be applied in combination with these materials to produce water repellent, mildew resistant effects in a one bath application. The product as supplied, is a free-flowing emulsion which can be mixed with other finishing ingredients with a minimum of agitation and heat.

ATCO REZSOFT JA
(Metro-Atlantic)

Cationic softener for all textiles. It is said to be particularly effective when used in combination with thermosetting resin formulations. Product is a soft, free-flowing slurry which is readily soluble in warm water. It does not discolor whites and the soft hand imparted by Atco Rezsoft JA is said to be durable to repeated laundering and dry cleaning.

ATLASOL AG
(Atlas)

This retarding agent is said to be particularly useful with the new fast acid type colors. It is stated that it retards and levels these dyes on wool and wool-synthetic blends. When used with ammonia on over-dyed shades, it is reported to level and bring the shade down without destroying brightness and without harshening the fibers.

AULABRITE* BINDER 740
(Aula)

This binder is particularly suitable for use in pad dye application of Aulabrite colors. It is based on a combination of stabilized thermoplastic elastomers. It will cross-link and become thermosetting when used in conjunction with Aulabrite Binders 794 or 796. This binder is said to be stable under the rigorous mechanical requirements of pad application.

*Registered trade-mark

AULABRITE* BINDER 743
(Aula)

This binder is based on a combination of stabilized elastomers developed for use with Aulabrite color concentrates for printing and pad dyeing. It is particularly suitable for print application. This new binder is said to produce prints with exceptional low dry and wet crock, and excellent washfastness. It is said to have excellent running properties both in machine and in screen printing.

*Registered trade-mark

AULABRITE* BINDER AND EXTENDER CONCENTRATE 794
(Aula)

A self-emulsifying thermosetting resin solution, developed for use in the preparation of Aulabrite Extender Clears, and to act as a cross-linking agent for Aulabrite Binders 740 and 743.

*Registered trade-mark

AULABRITE* EMULSIFIER SPAH
(Aula)

A combination of emulsifiers and dispersing agents to be used in the preparation of Aulabrite Extender Clear of the starch type, especially of the 180 Series. This emulsifier may be also used in the preparation of the methylcellulose type extenders, such as Extender 157.

*Registered trade-mark

AULABRITE* METALLIC BINDER 888F
(Aula)

An improved bronze binder which, it is stated, will produce metallic prints with exceptional brilliance and resistance to washing, dry cleaning, and flaking.

*Registered trade-mark

"AVITEX"* MI SOFTENER
(Du Pont)

A highly effective liquid type cationic product containing 100% active ingredient. It is said to possess a high substantive affinity for textile fibers and impart a high degree of absorbency to cotton. It is suitable for use as a pure finish and in conjunction with resins on cottons and synthetic fibers.

*Registered trade-mark

BERKOL PD
(Berkshire Corp)

Said to be an efficient and economical dispersing agent that has found application in a great many industries. It is the neutral sodium salt of a complex condensed organic acid. It is a tan colored, free-flowing granular material readily soluble in water and the solubility is not appreciably affected by salts and acids. It is stated that frothing and foaming are not encountered in any milling, grinding or mixing operations where Berkol PD is used as the sole dispersing agent.

BINDER PPI-9283
(Morningstar, Nicol)

A synthetic resin binder for glitter, flock and metallics. It is said to possess excellent fastness to dry cleaning.

BINDER PPI-9326
(Morningstar, Nicol)

A ready to use pigment and flock binder, said to be fast to washing and dry cleaning. Thermoplastic, requires fusing to insolubilize. Produces a soft, colorless, clear film which is said to possess excellent bonding properties.

BLANCOPHOR* LS-86
(Antara)

A new optical brightener for application on cotton and rayon which exhausts well and uniformly from a long liquor. It will be of principal interest on such textiles as bleached cotton hose, yarns, knit goods and piece goods.

*Registered trade-mark

BRYFIX #7
(Bryant)

A cationic dye fixative, said to be highly concentrated and efficient. It is further said to be extremely economical and to have a minimum effect on shade change and light fastness.

BURKOTE KNOTLESS SPLICING COMPOUNDS
(Burkart-Schier)

Improved adhesives for knotless splices, which are said to be instant setting. It is stated that they make it possible to quickly and easily splice spun nylon and other yarn commonly considered difficult. May be applied from conventional dispensers or from polyethylene dispenser which provides a controlled-size drop as needed. Other Burkote splicers are suitable for natural and synthetic fibers where knots cannot be tolerated; also because of the convenience and ease of splicing with these new adhesives.

CATALYST H-7
(Rohm & Haas)

A thermosetting resin catalyst developed for improving the degree of cure and better physical properties on cotton and rayon fabrics. It is stated that the bath stability is excellent, and the product is compatible with cationic and nonionic materials.

CERANINE* HCS CONC
(Sandoz)

A cationic softener especially designed for used in resin finishing. Ceranine HCS conc is a white viscous liquid, easily soluble in water. It does not affect the penetration of resin and therefore, it is stated, promotes reduced shrinkage and increased crease recovery. Ceranine HCS conc materially improves tear strength and flex abrasion resistance, it is reported.

CERFAK* 1422
(Houghton)

A nonionic detergent for scouring raw wool in neutral solution. Cerfak 1422 is a highly concentrated almost water-white clear liquid with a pleasant odor. It is stated that, because this is a "one piece" product, it is not necessary to add any other material, such as inorganic salts, to produce high scouring efficiency. In addition, stock scoured with Cerfak 1422 is said to be much whiter and more open than stock scoured with a detergent-soda ash combination.

*Registered trade-mark

CETYL ALCOHOL
(Aceto)

This product is used as an emulsifying agent and assistant, and as a textile lubricant.

CHEELOX* B-13
(Antara)

A liquid all purpose organic sequestering agent which inactivates calcium and magnesium as well as the iron often encountered with these ions. It is a balanced mixture of the soluble salts of amino carboxylic acids and is said to be soluble and stable at all temperatures in neutral, acid and alkaline solutions. It is stated that Cheelox B-13 is of particular value as a sequestrant in stabilizing hydrogen peroxide bleach liquors, inactivating iron ions in alkaline solutions and preventing iron stains in alkaline processing liquors. It is recommended by the manufacturers for use in many textile operations, such as kier boiling, dyeing and fast-color soaping.

*Registered trade-mark

CHEELOX* HE-24
(Antara)

A liquid hydroxyethyl type sequestering agent used to control calcium, magnesium and iron ions as well as other heavy metal ions. It is claimed to be an effective iron ion sequestrant in alkaline solutions. Cheelox HE-24 is the trisodium salt of hydroxyethyl triacetic acid and is soluble and stable in neutral, acid and alkaline solutions. It is said to be effective for use in various phases of textile processing, such as neutral or alkaline washing, dyeing, etc.

*Registered trade-mark

CHEMIGUM* LATEX 247
(Goodyear)

This copolymer of butadiene and acrylonitrile is a medium solids latex with improved resistance to discoloration upon exposure to heat and light. It is stated that this latex is particularly suited for textile and paper impregnation and coating applications where solvent resistance is required and improved ultraviolet resistance is desired.

*Registered trade-mark

CHLORANIL
(Naugatuck)

(Tetrachloro-parabenzoquinone). A dyestuff intermediate for use in complex dyes.

CIBALAN* SALT S
(Ciba)

A new dyeing assistant for use with Cibalan dyes on wool and nylon, this product makes possible dyeing with the Cibalans on the acid side. When it is desired that these dyes be applied in an acid bath, Cibalan Salt S is used to control exhaustion and insure even dyeing.

*Registered trade-mark

CLARAPENT* NEUTRASCOUR
(Atlas)

This is a true neutral scouring agent for raw wool requiring the use of no additives

*Reg U S Pat Office

or builders such as alkali or salts. It is stated that the scouring cycle may be operated at lower temperatures than are usually recommended thus producing cleaner, whiter stock, less fiber damage and longer staple. Economical to use, it does not upset normal operating routines.

CONCAMINE NS
(Conco)

A cationic softener on the full soft side with considerable antistatic properties for use on cotton, rayon, acetate and the newer synthetic fibers. Excellent light and heat stability are claimed.

CONCAMINE O-2
(Conco)

A cationic softener specifically designed for Orlons, Dacrons and the newer synthetic fibers, stable to light and high temperatures.

CONCO FINISH TFP
(Conco)

A modified urea formaldehyde and flame proofing agent for nylons.

CONCO NYLODE
(Conco)

An organic nylon weighter without firmness, but with some fullness. Nylon weight may be increased from 2% to 6%.

CONCO NYLODE DULLER
(Conco)

A unique nylon duller, compatible with Conco Nylode.

CONCOSET 250
(Conco)

A modified urea formaldehyde syrup, for use in suitings, for weighting and firmness.

CONVAX EMH
(Bryant)

An emulsifiable synthetic wax for use in after-waxing of filament and spun yarns of all descriptions prior to weaving. It is said to improve loom efficiency and cleanliness of finished fabrics.

CRUSH-RESISTANCE CATALYST
(Baker)

The use of zinc nitrate as an acidic catalyst with cyclic urea or other specialized resins is said to be finding favor in the finishing of wash-and-wear cottons and rayons. Indications are that the use of this salt results in a product having good crush-resistance, and lowered chloride retention. Better break strength may be expected as a result of the lower curing temperatures required, it is claimed. Zinc nitrate in bulk quantities has been employed in recent production runs by textile finishers, and test quantities are being made available to the industry.

DECYLALDEHYDE
(Carbide and Carbon)

A mixture of methyl-substituted, ten-carbon aldehydes with little or no alpha substitution, the closest methyl group to the carbonyl being in the beta position. M W, 156.26; Sp G, 0.8290 at 20/20° C; B P, 197.0° C (760 mm); sol in water, 0.01% at 20° C; odor, penetrating; color, water-white. Chemical properties: undergoes reactions typical of aldehydes. Suggested uses: chemical intermediate; preparation of high molecular weight amines for corrosion inhibitors; perfumes. Should be of interest in modifying phenolic and polyvinyl acetal resins. Availability: pilot-plant quantities.

DEFOAMER H-450*
(Pioneer)

A nonionic, self-emulsifying wax, which disperses readily in hot water (above 60° C) to form a smooth, milky liquid. Recommended by the manufacturers for removing undesirable foam and froth in textile and paper processing.

*U S Patent 2,753,309

DEXTROL* SCOUR SO-17, SO-20
(Dexter)

This scour is effective for use in Burlington machines for nylon and acetate tricots. It is a completely emulsified, high-boiling, nontoxic solvent containing wetting agents and detergents. It is claimed to eliminate free solvent in the bath and residual odors in the goods. This product is also claimed to remove dirt and grease from fabrics when used in becks and jigs.

*Registered trade-mark

DIALLYL AMINE
(Carbide and Carbon)

$(CH_2{=}CHCH_2)_2NH$. M W, 97.16; Sp G, 0.7925 at 20/20° C; B P, 110° C (760 mm). An unsaturated secondary amine of interest in the manufacture of resins, pharmaceuticals, fungicides, and textile chemicals. Availability: development quantities.

DIANOL* OR
(Quaker)

Basic dye retarder especially formulated for use in acrylic fiber dyebaths. It is said to be a clean, economical product that provides even, gradual exhaustion. Will not scum in the dyebath. Applicable to both the present type 42 Orlon and the newer, more rapidly dyeable fiber.

*Registered trade-mark

DIAPENE* S
(Quaker)

Flexible binder for heavy starch formulas, including those containing mineral fillers like talc. No softener or plasticizer required. Flexibility of product is inherent, and no plasticizer is present to migrate.

*Registered trade-mark

DIAPENE* VBH
(Quaker)

Acrylic copolymer emulsion that is quickly soluble in alkaline media. It is said to be exceptional in many locations where high viscosity is needed, as in backfilling mixes. Gives a clear, lustrous stiffness when used in alkaline solution as a pure finish. Recommended by the manufacturer as warp size.

*Registered trade-mark

DICHLONE
(Naugatuck)

(2,3-dichloro-1,4-naphthoquinone). A short-stop chemical for use by dye processors.

DIETHYLAMINOETHYL ACRYLATE
(Carbide and Carbon)

$CH_2{=}CHCOOCH_2CH_2N(C_2H_5)_2$. M W, 171.23; Sp G, 0.926 at 20/20° C; B P, 116° C (50 mm); Fr P, sets to a glass below —100° C. Chemical properties: can be copolymerized with acrylic esters and other monomers; will add to compounds with active hydrogens thus providing a means of introducing the diethylaminoethyl group into other molecules. Suggested uses: preparation of synthetic resins, oil soluble dispersants, and corrosion inhibitors. Availability: experimental quantities.

DIMETHYLAMINO PROPYLAMINE
(Carbide and Carbon)

$(CH_3)_2NCH_2CH_2CH_2NH_2$. M W, 102.2; Sp G, 0.8243 at 20/20° C; B P, 136.5° C (760 mm); R I (n_D), 1.4373 at 20° C; V P, 1.7 mm at 20° C; Fr P, sets to glass below —100° C; sol in water, complete at 20° C; sol of water in, complete at 20° C; completely soluble in acetone, benzene, ethyl ether, heptane, methanol, and carbon tetrachloride at 25° C. Chemical properties: contains a primary and a tertiary amino group; reacts to form fatty acid soaps, amides, and quaternary ammonium salts. Suggested uses: intermediate for the manufacture of amides useful in the preparation of cationic surface-active agents for finishing and wetting agents; also used as a catalyst for epoxy resins. Availability: commercial quantities.

DISPERSINOL HP
(Arkansas)

Primarily a dye bath assistant for use where fabrics are to be subsequently finished with silicone water repellents such as Hydro-Pruf. It is said to be an efficient dispersing and leveling agent for most classes of dyestuffs, and does not adversely effect the spray rating of fabrics treated with Hydro-Pruf when carried over into the finishing bath. Dispersinol HP is a clear amber liquid which dissolves readily at all temperatures. No other dispersing and leveling agents should be in the dye bath in connection with the specified use, since such additives may effect adversely the spray rating of the finished fabric.

DOWFAX® 2A1
(Dow)

This is a new anionic surface-active agent of the sulfonate type. It is a light colored, free-flowing powder containing a minimum of 85% active ingredient. It is said to be stable when heated for extensive periods in strong basic or acid solutions, hence should prove especially suitable in kier boiling of cotton.

DRAPETEX 35
(Hart)

A new cationic softener which is said to be featured by high and rapid solubility and unusual stability to acids, mild alkalies, and salts. It is stated that it produces a full and lofty hand on cellulosic and synthetic fabrics and shows low yellowing at high temperatures. It finds ready application as a softener in resin finishes, where high acid-stability and good solubility are a requirement. It also is said to produce good antistatic properties on synthetic fabrics.

DRILENE C
(Refined)

A nonionic, resin-type water repellent. It may be applied either alone or with resins to cotton, rayon, acetate, wool and the various synthetic fibers and blends. It is said to impart water repellent finishes which show good resistance to washing and dry cleaning.

DRILENE N-2
(Refined)

A self-emulsifiable viscous liquid which is said to impart good water repellence to cotton, rayon, wool, nylon and other synthetic fibers and fabrics. It may be used with various resins in crease-proofing and finishing textile fabrics.

EK-438
(Morningstar, Nicol)

60-62% solids of a polyvinyl resin emulsion. Fully compatible with starches and dextrines. May be blended and cooked with starch and starch derivatives. Used in finishing and sizing of textiles to obtain body, stiffness and bond.

ELOSOL SG
(Sandoz)

Antistatic agent for application on synthetic fibers. It is said to prevent electrostatic charges being built up during processing or subsequent wear. Elosol SG is a water soluble, neutral, nonionic, cream colored paste, which is said to impart a soft hand and a slight scroop finish. It is stated that it withstands boiling water but is not fast to washing. The anhydrous brand Elosol SG conc can be added to mineral or vegetable oil lubricants or softeners for spinning, combing or sizing.

ELOSOL UW
(Sandoz)

A durable antistatic agent for application on synthetic fibers. It is said to prevent electrostatic charges and at the same time impart softness. Elosol UW is a neutral, brownish, cationic paste. The effect obtained with Elosol UW is said to be fast to washing with soap or synthetic detergents up to 105° F. It is not fast to washing with soda ash.

ELOSOL V
(Sandoz)

Antistatic agent for application on synthetic fibers. It is said to prevent electrostatic charges

being built up during processing or subsequent wear. Elosol V is a neutral nonionic, clear, viscous liquid of brown color, easily soluble in water. The effect obtained with Elosol V is said to be fast to rinsing in boiling water but not fast to washing. Elosol V is suitable for addition to oil in water emulsions.

***EMBOSET BM**
(Metro-Atlantic)

A methylated urea formaldehyde resin in liquid form. It is said to have outstanding storage stability and bath stability. This product is recommended by the manufacturer for applications to any cellulosic fabrics where outstanding crease recovery and shrinkage control are required. It is also said to be an excellent resin for embossing and other mechanical finishes. The performance pattern of Emboset BM is similar to that obtained with ethylene urea resins with the exception that Emboset BM will retain chlorine. It is recommended by the manufacturer for any resin finishing application where high crease recovery values and extreme durability are required, and where chlorine resistance is not an important factor.

*Registered trade-mark

***EMBOSET Z**
(Metro-Atlantic)

Fiber reactant ethylene urea resin, which is said to produce outstanding crease recovery and shrinkage control in cellulosic fabrics with a minimum of chlorine retention. It is stated that all effects produced with Emboset Z will show outstanding resistance to laundering and dry cleaning. Product is recommended by the manufacturers for minimum care finishes on cottons, crease resistant, shrink resistant finishes on rayons, and mechanical finishing of all cellulosic fibers. The hand obtained with Emboset Z is said to be soft and resilient.

*Registered trade-mark

EMERSOFT* 7700
(Emery)

A high-quality nonionic softener, it is stated that Emersoft 7700 not only imparts full-bodied softness at a low cost per yard, but it also provides excellent resistance to yellowing, eliminates sewing problems, minimizes scorching, and prevents waterspotting. A 95% active paste, Emersoft 7700 is easily dispersible in warm water and can be used over a wide pH range of 3.5 to 12. Primarily recommended for all cotton softening requirements. Shipment in 55 gal. open-head drums.

*Registered trade-mark

EMKAFIX RXC
(Emkay)

A new type quarternary ammonium resin fixative. It is said to be very efficient for after-treatment for directs, develops, sulphurs, etc. Minimum change in shade and light fastness has been observed, and migration of colors is in most cases completely removed. Emkafix RXC is a clear liquid, stable to normal storage conditions, compatible with Glauber's salt and sulfuric acid. Many dyestuffs can be improved to pass a number 2 or 3 wash test.

EMKALAR 29
(Emkay)

A new type accelerant for the dyeing of Dacron and its blends with other fibers. It is said to be readily dispersible in water and show minimum effect on light fastness. Color yield is said to be excellent, and to be speedily obtained.

EMKALON PF
(Emkay)

A softener of the anionic type which was developed for its ease of handling and ready solubility in water. Emkalon PF is compatible with many types of finishes. In appearance Emkalon PF is a white soft paste which mixes readily with water at all temperatures.

EMKANOL CH-50
(Emkay)

A stable mixture of phenolic materials and chelating agents. It is said to be very useful as a penetrant for the mercerizing bath, while at the same time minimizing the problems due to iron, copper and other metal contaminates.

EMKASENE
(Emkay)

A sequestering agent of the polyamino carboxylic type used as a chelating agent for various materials. It is soluble on the acid side and is said to effectively chelate hard water salts, ferrous iron and other metal ions.

EMULSIFIER VA
(Mona)

An economical emulsifier for petroleum hydrocarbons like kerosene used in the scouring operation of fabrics made from synthetic fibers like nylon, Orlon, Dacron, etc.

ENDURMEL
(Bryant)

A cationic softener of extremely high concentration that is said to give maximum softness and drape with a complete absence of chlorine retention. Does not yellow when exposed to high temperatures. Highly soluble, readily dissolving in solutions at room temperature.

EXOL-K145*
(Soluol)

A bleaching assistant for use with hydrogen peroxide. It is stated that it accelerates the bleaching operation, produces clearer and brighter whites and more uniformly absorbent fabrics, and permits economy in chemicals.

*Registered trade-mark

ETHYLENE CARBONATE
(Dow)

A white solid which is highly soluble in water and methanol, moderately soluble in ether. It is used as a solvent and spinning solution for certain synthetic fibers, including nylon, polyacrylonitrile, and aromatic polyesters.

FABRIXOL NI
(Bryant)

A low molecular-weight thermosetting resin for crush-resistant and stabilized finishes. It is said to give a soft full hand with a minimum of loss in tear and tensile.

FELCOMINE VAB
(Feeley)

This product is said to combine high wetting and leveling efficiency with desirable low foaming properties and is useful in most types of dyeing, especially where foam build up interferes with proper processing. Material is anionic in character and instantly soluble in water at any temperature.

FELCOWHITE 174
(Feeley)

This product is said to be a highly efficient fluorescent finish designed to improve whiteness of wool, acetate and nylon. The stable liquid insures instant solubility in the bath and complete utilization of the active product.

FELCOWHITE 180
(Feeley)

This product is claimed to be a highly efficient fluorescent finish designed to improve the whiteness of cotton and rayon. The stable liquid insures instant solubility in the bath and complete utilization of the active product.

FELSYN 187
(Feeley)

This is said to be a much improved and highly efficient type of assistant or "carrier" for dyeing Dacron. A fine particle size emulsion of the active agent is developed and the bath remains stable during long dyeing cycles and very little settling of the carrier particles takes place on long standing and they are readily dispersed on further agitation.

FIBACON 224-40S
(Burkart-Schier)

A fiber conditioning agent for cotton as well as synthetic yarns. A nonionic ester which is said to have excellent lubricating as well as wetting properties and outstandingly good aging properties. Forms clear solutions in cold water.

FILASEAL RESIN AC
(Amalgamated)

This resin is a product specially designed to impart anti-curl properties to knitted fabrics. It also imparts lubricity as well as fullness to the treated cloth.

FINISH NT
(Morningstar, Nicol)

Textile finishing compound for synthetic fibers. It is said to produce full firm handle with good adhesion to hydrophobic fibers.

FIXOGENE TN EXTRA LIQUID
(Francolor)

Fixogene TN extra liquid is in the form of an amber colored liquid weakly acid and miscible with water in all proportions. This is a high molecular cation active product which is said to be simpler to apply than metallic salts and to be not limited to a small number of colors. This product is applied cold to dyed or printed goods with an increase in wet fastness of direct colors on cotton, linen, viscose, natural silk, and mixture of wool and cellulosic fibers. It may also be applied to acid dyes printed on viscose and has no ill effect on sulfur colors used in the rubber industry being free of copper and manganese salts. The improvement obtained when used in connection with copper sulfate is said to extend to severe washing at 205° F with 2 g soda ash and 5 g soap per liter. It is stated that Fixogene TN extra liquid can be stripped from the goods contrary to many dye fixing agents. CFMC's No 44 FED shade card records the change in shade, light, washing, water fastness properties of direct and fast to light direct colors when after treated with Fixogene TN extra liquid which information is of invaluable help to the dyer.

HARTEX PN
(Hart)

This product is recommended by the manufacturers for use as an assistant in peroxide kier bleaching. It is stated that it gives rapid wetting-out, deactivates enzymes not completely removed from the fabric in desizing, and does not decompose the peroxide.

HARTOSET E
(Hart)

This etherified urea-formaldehyde resin is recommended by the manufacturers for crease-proofing and shrinkproofing cottons and rayons, for permanent mechanical effects such as embossing, schreinering, and glazing, for stiffening of synthetic net fabrics, and for stabilization of knit-goods. It is stated that it has high stabilizing efficiency, good whiteness retention, gives a soft hand, and is especially recommended for the formulation of "wash-wear" and "drip-dry" finishes. It features ready solubility and unlimited storage stability.

2,4-HEXADIENAL
(Carbide and Carbon)

$CH_3CH{=}CHCH{=}CHCHO$. M W. 96.12: Sp G, 0.894 at 20/20° C; B P, 170.9° C (760 mm); V P, 1.2 mm Hg at 20° C; Fr P, —27.9° C: sol in water, 0.73% by wt at 20° C; sol of water in, 3.2% by wt at 20° C. Suggested uses: chemical intermediate. Availability: research quantities.

HYDROXYLAMINE SULFATE — VHS_{80} & VHS_{95}
(Virginia Smelting)

This product, often referred to as hydroxylammonium sulfate, is a convenient and economical source of hydroxylamine (NH_2OH). This material is offered in two grades, VHS_{80} and VHS_{95} which are tradenames of the commercial grades of hydroxylamine sulfate of 60% and 95% assay, respectively. Hydroxylamine sulfate is used in the dyeing of acrylonitrile fibers which are dyed with acid dyes by the cuprous ion method. In this process, cuprous ions are produced by reducing cupric sulfate with hydroxylamine sulfate. The cuprous ions are absorbed by the nitrile groups in the fiber forming a complex which then reacts with acid dyes to form water insoluble salts.

ISOOCTANOIC ACID
(Carbide and Carbon)

$C_7H_{15}COOH$. A mixture of dimethyl hexanoic acids and methyl heptanoic acids with the closest methyl substitutions occurring in the beta position. M W, 144.21; Sp G, 0.9189 at 20/20° C; Distillation Range, 226.5 to 242° C (760 mm); sol in water, 0.15% by wt at 20° C; color, water-white. Chemical properties: undergoes reactions typical of organic acids. Suggested uses: intermediate for metallic paint driers, non-yellowing alkyd resins, vinyl stabilizers, plasticizers, fungicides, synthetic lubricants, water-treating amides. Availability: pilot-plant quantities.

JEF GUM HV
(Morningstar, Nicol)

A prepared high viscosity printing gum for all types of dyestuffs.

KALISCOUR*
(Kali)

A nonionic scouring compound which is paid to offer the following advantages: a high degree of efficiency for use; in combination with either cationic or anionic agents to improve wetting, penetration and detergency; in hard water; where quick and efficient removal of grease is required; where cleaning and wetting action are required simultaneously; where good emulsifying properties are required; may be used in combination with tetrasodium pyrophosphate, sodium hexametaphosphate, sodium tetraphosphate, trisodium phoshate, sodium silicates and carbonates; effective on wool and all other fibers, including synthetics.

*Registered trade-mark

KYLAN (Deacetylated Chitin)
(Moretex)

A glucose amine similar in structure to that of cellulose. A basic chemical recommended by the manufacturers for woolen shrinkage control, water repellents, sizing, increasing wet strength, adhesives, and can even be extruded as a fiber.

"LATYL"* DEVELOPER B SOLUTION
(DuPont)

A special prepare for use in the application of "Latyl" Diazo Black B to "Dacron" polyester fiber. When the product is subsequently acidified during dyeing to form the free naphthol, a finely divided colloidal dispersion is obtained. It is stated that "Latyl" Developer B solution has proved successful in both laboratory and mill evaluations in producing desired shades at high temperatures on both spun and filament "Dacron" and on blends of "Dacron" with cotton or nylon. "Latyl" Developer B Solution is said to considerably reduce the make-ready time and to assure the dyer of more satisfactory shades and greater dependence in reproducing such shades.

*Registered trade-mark

LAURAMINE RT
(Laurel)

An anionic paste softener for natural and synthetic yarns and piece goods. It is stated that it will impart softness and lubricity, is very stable, and highly resistant to yellowing. It is claimed to be an excellent napping lubricant and a top softener for resin finished goods. Application to piece goods will lubricate the fibers and therefore facilitate the cutting and sewing operation. It will also impart a full resilient hand.

LAVEPON* WS-2
(Rohm & Haas)

A nonionic surfactant, said to be outstanding for raw wool scouring in neutral or alkaline systems; also for wool piece goods, top and skeins. Lavepon WS-2 is further said to produce fiber with superior color and physical properties.

*Registered trade-mark

LEMASIZE W10 & W20
(Borden)

Warp sizing for acetate loom finish. Orlon and Dacron. Alkali-soluble, ammonia-soluble vinyl acetate copolymer in powdered form, at two different viscosities.

LEUCOPHOR BS LIQUID
(Sandoz)

A concentrated optical brightener in liquid form effective on cellulosic and polyamide fibers. Leucophor BS Liquid gives a pure white of bluish cast, said to be of good light fastness and excellent washfastness. Leucophor BS Liquid is said to possess very strong leveling power and therefore, is ideally suited for application in kiers, package and other pressure machines.

LUMATEX® BINDER F
(Nova-BASF)

A new binder for use in conjunction with the Lumatex pigment colors for padding on cotton and synthetic piece goods, requiring only the addition of water. No other auxiliaries or catalysts are necessary. Any of the standard resins used in finishing may be added for a one-bath operation.

LYOGEN DK
(Sandoz)

A leveling agent for direct and vat colors. Lyogen DK makes it possible to use combinations of dyes with different rate of strike. Applied at higher concentrations in a blank vat it is used for stripping of vat colors. Lyogen DK is a brown, neutral paste, readily soluble in water, mainly nonionic in character but possessing certain characteristics normally associated with cationic products. It is said to be stable to alkali, acid and hard water and to show low foaming properties.

2-METHYL-1-PENTANOL
(Carbide and Carbon)

$CH_3CH_2CH_2CH(CH_3)CH_2OH$. M W, 120.18; Sp G, 0.8252 at 20/20° C; B P, 148.0° C (760 mm); sol in water, 0.31% by wt at 20° C; completely soluble in most common organic solvents; color, water-white. Chemical properties: undergoes reactions typical of alcohols. The *alpha*-methyl substitution gives added stability to esters. Suggested uses: chemical intermediate for plasticizers, synthetic lubricants, mining chemicals, oil additives, surface active agents; for solvent applications. Availability: pilot plant quantities.

MONAPOLENE A
(Mona)

An anionic polyethylene emulsion recommended by the manufacturers as a softener and additive to crease-resistant and wash-and-wear finishes.

MONAPOLENE N
(Mona)

A nonionic polyethylene emulsion recommended by the manufacturers as a softener and additive to crease-resistant and wash-and-wear finishes.

MONATERGE #8-71
(Mona)

This detergent is recommended by the manufacturers for the scouring of raw wool in alkaline bath. A nonionic product, it is said to show excellent cleaning action with good rinsibility. It leaves the wool in very good condition for further processing.

MONATERGE #8-91B
(Mona)

This Monaterge is recommended by the manufacturers for the scouring of raw sheep skins to shorten the soaking and scouring time and to improve the quality of the pulled wool.

MONITOR A
(Globe)

An organic sequestrant and solubilizer. It is recommended by the manufacturers for use in routine scouring, bleaching, dyeing, printing and finishing operations. In scouring and washing it will solubilize iron and other metals which discolor and tender yarns and fabrics. It is stated that it can replace oxalic acid for iron removal and has a stabilizing effect on peroxides. It is said that the addition of Monitor A to the dyebath will usually eliminate difficulties due to poorness of shade or intensity or streakiness. It is further stated that the use of this product will stabilize printing pastes and has a plasticizing effect on gums.

MOREPEL RW
(Moretex)

A renewable water repellent of extremely fine particle size. Because of an entirely new method of manufacture, it is stated that this water repellent may be run hot or cold, is stable to freezing, and will not effect color fastness. It shows no wicking in 72 hours on automotive fabrics.

MORETEX NAPPING SOFTENER A
(Moretex)

An assistant which is said to give excellent lubrication for napping wires and to produce a soft silky hand to the fabric. This material can be exhausted from a bath or padded to wet or dry fabric, eliminating one or two drying operations. Light fastness is not affected.

MOROPOL 600
(Moretex)

A nonionic polyethylene emulsion of extremely fine particle size used in resin finishing of textiles as a durable softener to increase crease recovery, tear and tensile strength. As with all polyethylene emulsions there is no possibility of rancidity.

MOROPOL 700
(Moretex)

A nitrogen-free nonionic polyethylene emulsion used in conjunction with thermo-setting resins to maintain tear and tensile strength. It is stated that, in addition to its durable softening effect, it increases angle of recovery and eliminates the necessity of using fat based softeners. Compatible with dye fixatives, metal salts, acids, etc.

MOROPON LC
(Moretex)

A new detergent said to be of excellent efficiency and extremely good money value. It prevents crack and crush marks and contains all advantages of cocoanut amine condensates and economy of less expensive fatty acids. Contains no tall oil or rosins.

N-METHYL-bis-(AMINOPROPYL) AMINE
(Carbide and Carbon)

$CH_3N(NH_2CH_2CH_2CH_2)_2$. A crystalline solid. M W, 145.25; Sp G, 0.9014 at 20/20° C; B P, 98° C (6 mm) and 55° C (1 mm); R I (n_D), 1.4690 at 30° C; color, white. Chemical properties: undergoes reactions typical of primary and tertiary amines. Suggested uses: chemical intermediate. Availability: development quantities.

N-METHYL PIPERAZINE
(Carbide and Carbon)

$HNCH_2CH_2N(CH_3)CH_2CH_2$. M W, 100.16; Sp G, 0.9140 at 20/20° C; B P, 136° C (760 mm); color, clear liquid. Suggested uses: pharmaceutical intermediate of interest in the manufacture of anti-histamines, tranquilizing drugs, and motion sickness remedies. Availability: development quantities.

n-PENTANOL
(Carbide and Carbon)

$C_4H_9CH_2OH$. M W, 88.15, Density, 0.8144 at 20/20° C; B P, 138° C (760 mm); sol in water, 2.7% by wt at 22° C; color, water-white; odor, mildly fruity. Chemical properties: undergoes reactions typical of normal alcohols. Suggested uses: intermediate for pharmaceuticals, plasticizers, synthetic lubricants, mining chemicals, corrosion inhibitors, wetting agents. Availability: research quantities.

n-VALERALDEHYDE
(Carbide and Carbon)

$CH_3(CH_2)_3CHO$. M W, 86.13; Sp G, 0.8110 at 20/20° C; B P, 103.4° C (760 mm); color, water-white. Chemical properties: undergoes reactions typical of aldehydes. Suggested uses: chemical intermediate: for the preparation of amines for accelerating rubber vulcanization;

modified polyvinylacetal, phenolic, and urea resins. Availability: research quantities.

NEOWET X
(Royce)

A companion product to the original Neowet. It does everything that the Neowet does plus the added advantage that it can be used in peroxide baths for bleaching. It is also useful as a wetting agent in enzyme baths for desizing. 1 to 2 pounds per 100 gallons of the bleaching or sizing bath is said to assure adequate wetting. It is stated that its presence in the peroxide bleach seems to insure more speedy bleaching, partly because of thorough wetting, but probably also because of some synergistic action.

NILOFOAM S
(Arkansas)

A silicone type of defoaming agent which is applicable in almost all foaming problems. In most cases only small amounts in the order of 0.01% to 0.05% are required to produce effective defoaming. The stability of Nilofoam S, under all wet processing conditions, is said to be excellent thus eliminating the danger of causing spots on the goods being treated. In physical characteristics, Nilofoam S is a white emulsion and is nonionic in character thus making it compatible with practically all systems.

NIONINE POWDER OW #11
NIONINE LIQUID OW #22
(Amalgamated)

These products are used in conjunction with each other for the one-bath scouring and dyeing of wool. A saving of time, steam and kettle space are said to result from the use of this process. Wool is scoured clean and dyed evenly, with bright, clear shades.

NYLON WEIGHTER PG
(Arkansas)

Primarily a weighter finish for nylon tricot and said to possess the outstanding advantage of resisting yellowing at the normal setting temperatures used in nylon processing. It is also applicable to fabrics made from other fibers with the exception of cellulosic acetate, for the purpose of producing added weight. Nylon Weighter PG is a practically water white liquid, nonionic in character and readily soluble at all temperatures. Besides its use alone as a weighter, it may also be used in combination with dullers and other finishes.

ORCOLANA STRIP NA
(Organic)

This product when added to the dyebath in small amounts is said to promote level dyeing and prevent the "tippy" dyeing of wool. When used with nylons, "barre" effect is said to be reduced to a minimum. It is stated that an excess of Orcolana Strip NA in the bath will strip to an extent to allow a dyer to make adjustments in his shades. This product can also be used in discharge work on cotton and rayon with naphthols and vats, creating whiter whites by preventing redeposition of color.

ORCO PENTRO PS
(Organic)

A product especially designed for wetting and rewetting of pile fabrics. Orco Pentro PS can be used in all phases of normal processing and is said to help to assure more even bottoming, dyeing, and finishing.

ORCO SCOUR 48
(Organic)

A cold scour produced especially for the woolen and worsted trade. To be used on piece goods where general all round scouring ability is required. Orco Scour 48 is said to do an exceptionally good job on removing old sizing and miscellaneous dirt for the efficient handling of goods in processes to follow.

ORCO SYNTHROWITE GNW
(Organic)

An optical bleach in easy-to-use liquid form. This product produces a desirable white of greenish cast on nylon. It is stated that Orco Synthrowite GNW can also be used on wool and silk, and being fast to a peroxide bleach bath, serves the purpose of reduction of process time.

PARASOL 356
(Burkart-Schier)

An acid and electrolyte stable paraffin emulsion, for finishing, water repellency, control of hand, and special effects. Stable emulsion readily dispersible in warm water. Compatible with all water repellent finishes.

PERMA DULL
(Refined)

A cationic, pigment-type duller developed specifically to disperse readily in water, avoid build-up on rollers, provide maximum dulling action and prevent dusting-off on the finished fabric.

PERMAFRESH* 375
(Warwick)

This unique product is said to supply the need for a relatively durable textile germicide. Fabrics treated with Permafresh 375 are reported to not only destroy disease bearing bacteria but odor forming bacteria as well. The product is reported to be resistant to dry cleaning and to laundering. Application is very simple and may be made by exhaustion or by padding. Product is said to have excellent running properties, and is compatible with other nonionic and cationic finishes.

*Registered trade-mark

PERMA SET 500C
(Refined)

A solution of tetra methylolacetylene diureine which is used to stabilize viscose and viscose-containing fabrics. It is compatible with water-repellents, softeners, resins and other finishing agents.

PERMA SET 750
(Refined)

A methylated urea-formaldehyde resin which is said to impart a crisp, resilient finish to nylon and nylon-blend fabrics. It may be used with crease-proofing resins to modify the hand and body of the fabric.

PERMA SILENE
(Refined)

A stable emulsion of silicone resins which imparts to textile yarns and fabrics a water repellent and spot resistant finish. The emulsion is compatible with urea-formaldehyde and melamine-formaldehyde resins.

PIPERAZINE TECHNICAL
(Carbide and Carbon)

$HNCH_2CH_2NHCH_2CH_2$. A white, low-melting eutectic containing approximately 37% water. M P, approx 35° C; Flash Point, (open cup), 185° F. Suggested uses: raw material for the manufacture of salts useful as anthelmintics, intermediate for resins, rubber chemicals, dyestuffs, and surfactants. Availability: commercial quantities.

PLIOLITE* LATEX 150 (HIGH SOLIDS)
(Goodyear)

This emulsion polymer of butadiene and styrene is made at 45% solids concentration. It has an ammonia soap type of stabilization, resulting in good water resistance upon drying. It finds application as an additive in heat sealable natural-GR-S latex foams, adhesives, and as a modifier for natural-GR-S rug backing and textile coating compounds.

*Registered trade-mark

PLIOLITE* LATEX 170 (HIGH SOLIDS)
(Goodyear)

This emulsion polymer of butadiene and styrene is made at 45% solids concentration. The latex, made by using a volatile ammonium soap emulsifier, forms a continuous film at room temperature and is said to provide excellent water resistance. Stronger films are produced by heating to 250-300°F and are said to be characterized by abrasion- and chemical-resistance, as well as high gloss and excellent anchorage. The latex in combination with microcrystalline wax is being used successfully as a paper coating, and finds use as a sealer for wood, plastic and floorings.

*Registered trade-mark

PLIOLITE* RUBBER LATEX 2000
(Goodyear)

This copolymer of butadiene and styrene is reacted at a temperature of 150° F and consequently is known as a "hot polymerized latex." The latex has a medium solids content of 39-42%, and a particle size smaller than that of natural latex which provides greater penetration for beater impregnation of paper and impregnation of fabrics.

*Registered trade-mark

PLIOLITE* RUBBER LATEX 2001
(Goodyear)

This copolymer of butadiene and styrene is reacted at a temperature of 150° F and consequently is known as a "hot polymerized latex." The latex has a total solids content of 37-39% and provides good flexibility in coatings and saturants for textile products.

*Registered trade-mark

POLYCO 296-W
(Borden)

15% sodium polyacrylate of unusual thickening power, particularly for polyvinyl acetate, butadiene-styrene, and other latices.

POLYCO 678-W
(Borden)

A 55% internally plasticized vinyl acetate copolymer emulsion for piece goods finishes requiring a full firm hand, antislip properties and abrasion-resistance without the papery crispness of vinyl acetate homopolymers.

POLYCO 692
(Borden)

A 55% polyvinyl acetate emulsion homopolymer recommended by the manufacturers for piece goods finishing, and cotton warp-sizing additive. Compatible with starches and dextrines, and has good dilution stability.

POLYCO 694
(Borden)

A 55% polyvinyl acetate emulsion homopolymer recommended by the manufacturers for textile finishes where highest compatibility with starches, dextrines and flameproofing borate and phosphate salts is required. Polyco 694 is not recommended for use with polyvalent metal salts or with cationic-active materials. This polyvinyl acetate is said to be outstandingly fast to removal by laundering.

POLYGLYCOL E20,000
(Dow)

A polyethylene glycol having an average molecular weight of 20,000. Hard, tough solid. It is employed as a textile lubricant.

PRINTING GUM 5952
(Morningstar, Nicol)

A natural gum-based cold water-soluble print thickener for Rapidogens, Indigosols, aniline black, vat flash aging.

PRINTING GUM 9243
(Morningstar, Nicol)

A natural gum-based cold water-soluble print thickener used at high solids content. Used for printing silk and synthetic fibers.

PROFINE* SPECIAL PASTE
(Procter and Gamble)

A nonyellowing, anionic finishing agent which is said to impart softness and lubricity to all types of fibers. It gives a unique characteristic full-bodied, smooth softness. Developed especially to provide maximum scorch resistance in finished fabrics during high temperature drying, curing, setting, calendering, etc. It is claimed to be unexcelled for applications where resistance to discoloration due to heat and aging is desired.

2-PROPYL-1-HEPANOL
(Carbide and Carbon)

$C_3H_7CH(C_3H_7)CH_2OH$. M W, 158.28; Sp G, 0.8327 at 20/20° C; Distillation Range: 216.3 to 218.9° C (760 mm); color, water-white. Chemical properties: undergoes reactions typical of alcohols. The *alpha*-propyl substitution gives added stability to esters. Suggested uses: defoamer; dispersant for pigments and clays; solvent medium; intermediate for plasticizers, diester lubricants, oil additives, and textile lubricants. Availability: research quantities.

PRYM* E
(Warwick)

This product is reported to be a water soluble cyclic urea formaldehyde cellulose reactant capable of imparting properties of crease resistance, dimensional stability, and good resistance to chlorine degradation. It may be applied to fabrics composed of cotton, viscose, cellulose acetate, and blends. Prym E may be used in conjunction with durable type water repellents and with other types of finishing resins used in obtaining durable glazed or embossing effects.

*Registered trade-mark

PURATIZED *1102
(Gallowhur)

This is quaternary ammonium saccharinate** of good bacteriostatic properties said to possess unusual resistance to leaching and washings. Especially recommended by the manufacturers for rendering textiles antiseptic since material does not affect color or hand, is relatively non-toxic and is easily applied.

*Registered trade-mark
**Covered by U S Patent owned by Gallowhur Chemical Corporation

QUAKER REACTANT® SC*
(Quaker)

Dimensional control agent for rayon and cotton. It is said to control to within 1-2% total progressive shrinkage with total absence of chlorine retention. It imparts no hand to fabric, but almost all hand modifiers can be applied from the same bath; eg. thermoplastic resins, starch ether, nitrogen resins. Quaker Reactant SC contains no nitrogen, and is not a resinous material.
*Patent applied for

RANEFIX SG
(Metro-Atlantic)

Said to be an extremely efficient catalyst for use with silicone water-repellent emulsions. The product is a free-flowing dispersion which dissolves readily in cold water with a minimum of agitation. It is claimed that, when used in combination with Ranedare S and other silicone water repellent emulsions, this accelerator will produce outstanding water repellent effects. It is compatible with practically any of the finishing agents that would logically be used with it, including metallic salt catalysts, copper containing dye-fixing agents and all of the common thermoplastic and thermosetting resins.

REGINOL HNP
(Hart)

This 100%-active nonionic product is recommended by the manufacturers for all detergency, wetting and penetrating applications where stability to acids, alkalies, salt and heat is a requirement. It is stated that it is also an excellent emulsifier for natural oils, greases, and solvents, and will find a wide variety of uses in the textile, metal-cleaning and formulated-detergent fields.

RESIPON NR
(Arkansas)

A resin finish for use on cotton and rayon fabrics for the purpose of obtaining dimensional control and crush resistance. One of its outstanding characteristics is said to be its minimum effect on the tensile strength and abrasion resistance of fabrics to which it is applied. Its use requires a high curing temperature plus a catalyst of the amino-salt type such as Catalyst NI. In physical characteristics, Resipon NR is a stable white emulsion which is readily miscible in water at all temperatures. It is compatible with thermosetting and acrylic resins, and also in some cases with water repellents. Arkolube SIL is recommended by the manufacturers for use with Resipon NR where improved sewability and abrasion resistance are required.

REXOSOLVE EP
(Emkay)

A highly efficient mixture of synthetic detergents and concentrated solvents. It is said to be stable under acid, neutral and alkaline conditions. Rexosolve EP is further said to have excellent penetrating properties. It is stated that it also has efficient cleansing action due to its active solvent character.

REXOWET GR
(Emkay)

A highly concentrated penetrant and wetting agent in liquid form. It is claimed that a 0.05% solution (6 ounces per 100 gallons) of Rexowet GR will give a Draves wetting time of 20 seconds at 90° F; and a speed of 14 seconds at 120° F. It is said to show excellent advantages both money wise and in its speed of wetting.

RHONITE* 467
(Rohm & Haas)

An anionic polymeric thermosetting resin for use as a hand builder alone or in conjunction with crease-proofing resins. It is said to produce durable, crisp finishes and a considerable degree of dimensional stability, thus imparting various hand modifications to textile fabrics.

*Registered trade-mark

RHOPLEX* E-23
(Rohm & Haas)

A soft, aqueous dispersion of an acrylic polymer developed for back-coating. It is anionic, of low viscosity, and can be used alone or with fillers: particularly applicable as a binder for upholstery fabrics as it is said to possess excellent flexibility without tackiness and does not stiffen or discolor with aging.

*Registered trade-mark

RHOPLEX* WN-77
(Rohm & Haas)

A nonionic thermoplastic resin dispersion used alone or in conjunction with thermosetting resins for the development of a durable, full, firm hand in fabric finishing.

*Registered trade-mark

SCOURALL
(Onyx)

A product designed to provide high efficiency, low unit cost, and ease of handling in all phases of textile scouring, and one that is said to feature a high level of performance uniformly from room temperature to the boil.

SCROOPING AGENT D
(Arnold, Hoffman)

Scrooping Agent D, primarily a processing aid for viscose staple fiber, is recommended by the manufacturers also for the processing of many of the newer synthetic staple fibers. Usually spray-applied before blending operations, it is said to improve lubrication and static resistance during carding, reduce end breaks during spinning, and impart a pronounced scroop to the finished fabric.

SETAMOL* DA
(Antara)

A new assistant for use in alkaline and neutral wet finishing of stock or yarn dyed woolen and worsted fabrics. In finishing tweeds, plaids, checks, etc., it is claimed that Setamol DA added to the fulling solution prevents staining and discoloration caused by transfer of dyestuffs from dark shade dyed fibers to white or pale shade effects. Setamol DA is a liquid form product which is stable to hard water, and to acid and alkali in concentrations normally encountered in wool processing.

*Registered trade-mark

SEYCO* FINISH EFK
(Seydel-Woolley)

Designed for production of a full soft hand, Seyco Finish EFK is compatible with the usual gums, starches and other finishing agents, including nonionic and anionic materials. It emulsifies very easily to a stable emulsion. It is stated that this product has in addition good lubricating properties and is a highly effective rewetting agent, which makes the goods absorbent, so that it is well suited to compressive shrinking operations in the production of Sanforized goods. As such, it is recommended by the manufacturers as a one-piece finishing agent in paste form, for denims, heavy drills and twills.

*Registered trade-mark

SEYCO-LUBE KL
(Seydel-Woolley)

As a processing lubricant or as a finishing softener for yarns and woven goods, this product is quite versatile. Seyco-Lube KL comes in very easily handled cakes of one pound each, eliminating the difficulty encountered with many other highly concentrated products, which must be hacked or melted out of their containers. It is stated that this property alone has done much to enable its ready acceptance in the trade for raw stock lubricating, yarn finishing or softening of broad goods.

SEYCO-TERGE L
(Seydel-Woolley)

This product is a highly concentrated liquid blend of efficient synthetic detergents. Seyco-Terge L is said to have powerful penetrating action, and to be a very strong foaming agent. It is chemically quite stable and may be used under a wide variety of conditions for scouring and detergency of raw stock, yarn or cloth. This product may also be used effectively for the after-soaping of dyed and printed goods.

SEYCO-VEL DL
(Seydel-Woolley)

This is a further modification of the nonionic softener, Seyco-Vel D, which was introduced last year for finishing of white and colored goods. Seyco-Vel DL contains in addition to the ingredients in Seyco-Vel D an emulsified waxy lubricant, which is said to give excellent smooth surface feel, and contribute materially to the sewability of the goods through its lubricating power. Seyco-Vel DL is practically colorless and very stable to storage. Compatible with all ingredients normally encountered in textile finishing. It is claimed that this product is finding a good acceptance in finishes with thermosetting resins to replace cationic softeners, as it does not yellow and will not affect the light fastness of the dyestuffs in the way that cationics generally do.

SEYCO-WAX F
(Seydel-Woolley)

An inexpensive concentrated softener designed for use in medium to heavy starch finishes. Seyco-Wax F helps plasticize the starch film, and gives a smooth surface feel which, it is stated, can be readily calendered to a glossy finish. It comes in one-pound cakes, packed in cardboard cartons, which makes it very easy to handle, store and weigh.

SOFTENER 6569
(Morningstar, Nicol)

Softener and lubricant for natural and synthetic fibers. Dispersion of fatty amide condensates.

SOFTEX* 578
(Houghton)

A cationic softener said to possess high softening effectiveness as well as excellent stability on white goods. It is recommended by the manufacturers for synthetics as well as cotton. It is also effective as an antistatic agent.

*Registered trade-mark

SOFTEX* 595
(Houghton)

This anionic softener is for use on any type textile fiber. It is a white, paste-type product readily soluble in water at 120°F and needs little mixing to produce a stable emulsion. In addition to its softening ability, Softex 595 is said to possess excellent static suppression qualities when used with such synthetics as Nylon, Orlon and Dacron.

*Registered trade-mark

SOFTEX* 596
(Houghton)

A cationic, paste type softener developed expressly for softening acrylic fibers such as Orlon and Acrilan. It is also effective as a plasticizer for polyvinyl acetate.

*Registered trade-mark

SOFTREZ 9226
(Morningstar, Nicol)

Water-dilutable emulsifier of softeners used with thermosetting resins. It is said to produce a soft, full hand and increase abrasion resistance and tear strengths. Unaffected by solvents and laundering.

SOLASOL
(Aceto)

Sodium Lauryl Sulfate in needle form. Prevents dust irritation common to powdered Sodium Lauryl Sulfate. It is used as a dispersing agent, dyeing assistant and finishing agent.

SOLIDOGEN* LT-13
(Antara)

A liquid, cationic, resinous type fixing agent which is claimed to improve the wet and wash fastness of cotton or rayon fabrics and yarns dyed with direct colors. It is applied in an aftertreatment and is said to substantially improve the fastness to water, perspiration and hot pressing and to cause a minimum change in shade and reduction in light fastness. Solidogen LT-13 is applied as a self product or in combination with copper salts.

*Registered trade-mark

SOLUBLE PINE OIL 110
(Arnold, Hoffman)

A 95% active emulsion of pine oil. Used mainly as a textile surface-active agent, and specifically as a penetrant and scouring agent.

SOROMINE* AL
(Antara)

A new amphoteric softener in the form of a smooth white paste which is claimed to improve the sewing and napping qualities of fabrics and yarns. Soromine AL is said to impart excellent softening and lubricating effects on cellulosic, synthetic and animal fibers and can be applied on all types of textile processing equipment, ie, pads, jigs, package machines, dye becks, etc.

*Registered trade-mark

SPECO BLEACH ASSIST
(Independent)

A white powdery stable compound for use in conjunction with sodium chlorite in both stripping and bleaching of synthetic fabrics. It serves to slow down the release of ClO_2 gas, thus inhibiting odor and increasing the efficiency of the chlorite. It also acts as a rust inhibitor, assuring long life to machinery and equipment.

SPECO PAL EO 33
(Independent)

A 33% active nonionic alkyl phenol polyethylene oxide condensate. Speco Pal E O 33 is claimed to be an exceptionally fine detergent on all types of soil. It is stated that its high wetting action is especially potent at very low concentrations as such and that it is particularly beneficial for use in wetting out and in dyeing.

SPECO SODIUM CHLORITE
(Independent)

A pure white high quality sodium chlorite product of guaranteed 80% concentration. This material is used for the bleaching and stripping of all types of synthetic fibers. It is said to be especially suited for bleaching Orlon.

SPECON =33
(Independent)

A 33% nonionic alkylaryl polyether alcohol. Suggested uses—household and industrial cleaners, textile processing, emulsifying agent for insecticides and herbicides, complex mixtures, electroplating baths, and dispersant in many fields.

SPECON X 13
(Independent)

A 100% active nonionic polyoxyethylene ether of fatty alcohol. It is said to have unusual emulsifying properties at a low pH. It is also used for level dyeing of all types of dye.

STANDAFIN* 438
(Standard Chemical)

A polyethylene type softener in the form of a white paste which disperses readily in water to form stable emulsions having a pH of 4.5. It is compatible in resin baths. It provides surface effects which may result in some improvement in abrasion resistance and crease resistance, as well as a modification in hand and increased luster, particularly if the fabric is subjected to calendering.

*Registered trade-mark

STANSET Z-98
(Standard Chemical)

A new heterocyclic resin which is said to offer many advantages over the conventional types of thermosetting resins now used in the textile trade. It is stated that the properties of Stanset Z-98 combine high crease resistance, low chlorine degradation, high tensile and tear strength in relation to the crease angle. Stanset Z-98 may be applied to fabrics of cotton, viscose rayon, acetate, silk, nylon, and novelty blends. It is stated that it may be used on these fabrics to control dimensional stability, to develop a high crease angle and to modify hand. This resin is particularly applicable to the newer synthetic fibers and combinations of these fibers with cotton since this resin may be cured over a wide range of temperatures.

STANTEX* X-1060
(Standard Chemical)

Stantex* X-1060 is suggested for application to bulk type stretch yarns, such as Helanca, Flufflon, Superloft, etc. It is a clear oil that is said to provide excellent lubricity, antistatic and yarn relaxation properties. Low yarn running tensions, good package formation and good knitting are reported to result from its use. It is easily removed in scouring. It is usual to apply 2 to 3% at coning. Stantex* X-1060 has a viscosity of 82 secs SU at 100°F.

*Registered trade-mark

STANTONE X-4
(Standard Chemical)

A substantive softener and an antistatic agent in the form of a white paste that dissolves easily in hot water to form a hazy, opalescent solution having a pH of 6.5, which is said to be stable under alkaline, acid or neutral conditions and to be unaffected by hard water. Because of its amphoteric character, it is compatible with most textile auxiliaries, such as finishes, dye assistants, etc. It is stated that it has a minimum effect on light fastness and shade of dyed fabrics and does not discolor white fabrics. It is reported to be very effective as a softener and antistatic agent on cotton, wool, rayon, acetate and nylon. Application can be made in the rinse after dyeing or by padding in the finishing operation. It can be used as a softener in resin baths or as a top softener after resin treatments.

3 STAR OIL
(Morningstar, Nicol)

Lubricant and softener used as a throwing oil and for yarn soaking, winding. Highly sulfonated blended product, readily removable on boil-off.

STEARYL SULFATE
(Aceto)

It is used as a dispersing agent, dyeing assistant and finishing agent.

SULFANONE A
(Hart)

This new liquid anionic surfactant is recommended by the manufacturers for all scouring and dyeing operations on synthetic fabrics. It is stated that it has high detergency, wetting, penetrating and leveling properties, and exhibits excellent stability to acid, alkaline and hard-water salts.

SYNTHRAPOL* LC
(Arnold, Hoffman)

A 40% active, nonionic surface-active agent, based on ethylene oxide condensate. It is recommended by the manufacturers as a general purpose detergent and wetting agent, and is similar in use to the more concentrated Synthrapol KB.

*Registered trade-mark

SYNTHRAPOL* PWS
(Arnold, Hoffman)

A nonionic surfactant of the ethylene oxide type. It is highly concentrated, and small amounts are said to produce fast, highly effective wetting and rewetting. Synthrapol PWS is recommended by the manufacturers particularly as a detergent for wool.

*Registered trade-mark

TALLOW ALCOHOL
(Aceto)

This product is used as an emulsifying agent and assistant, and as a textile lubricant.

TANAVOL*
(Tanatex)

A new carrier for dyeing Dupont's Dacron polyester and Celanese's Arnel triacetate fibers. Tanavol is said to give outstanding color values, even, bright dyeings, and to allow adds of dyestuff in prolonged dyeing cycles. Tanavol has no appreciable effect on light fastness and is applied in a simple, one-step procedure.

*T M registration pending

TAR REMOVER LD-20
(Berkshire Corp)

It is stated that, by the use of this product, the removal of tar or substances of an asphalt nature can and has been successfully accomplished as an integral part or step in the bleaching of cotton fabrics for printing, dyeing and calendering of white, ivory, ecru, and other light shades at speeds up to 200 yards per minute by the continuous bleaching method.

TERGITOL* NONIONIC XH
(Carbide and Carbon)

A polyaklyene glycol-ether. White solid; Fr P, 36 to 46° C; Cloud Point (0.5% aqueous solution), 90° C min; Avg Wt per gal, 8.66 lbs at 40° C. Suggested uses: as a component of low-foaming detergent formulations and as an emulsifier for oils, waxes, and agricultural concentrates. Emulsifier, stabilizer, and pigment dispersant in latex formulations. Availability: commercial quantities.

*Registered trade-mark

TROUGH EMULSION X-1451
(Burkart-Schier)

A new fiber lubricant and conditioner with a unique combination of properties. It is stated that: when applied from trough yarn pick-up is rapid and uniform, and with no subsequent sticking; a smooth-running yarn well conditioned for subsequent knitting or weaving is readily achieved; Trough Emulsion X-1451 is anionic, stable, and noncorrosive.

It may be applied alone or in conjunction with other Burk-Schier fiber conditioners.

UNISHADE "NS"*
(Kali)

A scouring and levelling agent combined for the one-bath system of dyeing nylon hosiery. With Unishade "NS" both the scouring and dyeing of nylon hosiery may be done at the same time in a one bath operation. These are the advantages claimed when using Unishade "NS": (1) hard to remove oils and stubborn soils are washed out of the hosiery easily; (2) good welt-leg unions are maintained as the welt will not become lighter than the monofilament leg even under prolonged dyeing conditions; (3) uniform shades between the welt and the leg, and from one stocking to another are produced consistently; (4) over-dyed shades can be lightened uniformly by the addition of more Unishade "NS' to the dyebath and, for more extreme action, a new dyebath using the original amount of Unishade "NS" will produce an appreciably lighter shade without disturbing the uniformity between welt and leg; (5) Unishade "NS" will rinse out readily carrying the suspended soils with it.

*Registered trade-mark

UVITEX* ER CONC
(Ciba)

This product is a new fluorescent brightener that produces brilliant whites of a slightly reddish cast said to possess exceptional fastness to light and washing on Dacron. It is also effective for the whitening of acetate, Arnel, cotton, nylon and rayon.

*Registered trade-mark

VATROLITE 58 ELD
(Royce)

A buffered form of Vatrolite, similiar to Vatrolite 58E, which, it is stated, has found extensive use in bleaching many of the newer fibers, as it contains an optical bleach that dyes the fiber during the time it is being bleached, thus saving an extra operation.

VELUBRA SOFTENER LC
(Amalgamated)

This newly developed product combines the properties of softness with the characteristic "slip" of lanolin. Economical to use, it is easily applied to both hosiery and piece goods.

VELUBRA SOFTENER W
(Amalgamated)

This new softener may be used on synthetic as well as cellulosic fibers and is said to impart a high degree of softness with a minimum of yellowing. It is stated that shades are not adversely affected. The product is amphoteric in nature, and may thus be used either on the acid or alkaline side.

VELVAMINE SN
(Refined)

A cationic softening agent which gives durable softness and pliability to natural and synthetic fibers and fabrics. It is stated that it develops little or no foam during its application and it shows good resistance to discoloration on heating.

VELVAMINE T
(Refined)

A nonionic softening agent which gives a soft, full hand on natural and synthetic fabrics. It is stated that it is resistant to heat and light discoloration and will not affect the shade of dyed fabrics. It serves as an assistant in dyeing, napping and mechanical finishing operations.

VEVETOL* CF
(Quaker)

Liquid cationic softener readily dispersible in the treating bath. It is stated that it is especially suited for acrylic and nylon fabrics, and within this group has shown its greatest value on crimped fiber fabrics.

*Registered trade-mark

VIKON FPB
(Vikon)

A 55% thermoplastic copolymer emulsion which produces a clear, flexible, slightly elastic film. The film is said to have high stability to light and heat, remaining essentially unaffected below its softening point. Vikon FPB is further said to be effective in increasing tear and tensile strength when used at low concentrations in resin finishes. It reacts with the resin to become resistant to removal on washing. Vikon FPB is also a suitable backing for many types of upholstery fabrics forming a film which is unaffected by light.

VINALUBE R-100
(Vikon)

An emulsion of lubricants which is an economical finish for raw stock dyed viscose staple. It is stated that it exhausts uniformly and has made staple run in carding and spinning which would not run otherwise.

VINYL BUTYRATE
(Carbide and Carbon)

$CH_2{=}CHOCOC_3H_7$. M W, 114.14; Sp G, 0.9022 at 20/20° C, B P, 116.7° C (760 mm); Fr P, —86.8° C; sol in water, 0.3% at 20° C. Chemical properties: can be homopolymerized, or copolymerized with vinyl esters and acrylic esters by conventional polymerization techniques. Suggested uses: preparation of resins for use as surface coatings, textile sizes, and adhesives. Availability: commercial quantities.

VINYL DECANOATE
(Carbide and Carbon)

$CH_2{=}CHOCOC_9H_{19}$. M W, 198; Sp G, 0.871 at 20/20° C; B P 92.5-100° C (10 mm). Chemical properties: can be copolymerized with vinyl esters and acrylic esters to yield internally plasticized resins or viscous oils. Suggested uses: preparation of resins for use in surface coatings, textile sizes, adhesives, and oil soluble dispersants. Availability: experimental quantities.

VINYL 2-ETHYLHEXOATE
(Carbide and Carbon)

$CH_2CHOCOCH(C_2H_5)C_4H_9$. M W 170.24; Sp G, 0.8751 at 20/20° C; B P, 185.2° C (760 mm); Fr P, sets to glass below —90° C; sol in water, < 0.01% at 20° C. Chemical properties: can be homopolymerized, or copolymerized with vinyl esters and acrylic esters by conventional polymerization techniques to yield internally plasticized resins. Suggested uses: preparation of resins for use as surface coatings, textile sizes, and adhesives. Availability: commercial quantities.

VINYL PROPIONATE
(Carbide and Carbon)

$CH_2{=}CHOCOC_2H_5$. M W, 100.11; Sp G, 0.9173 at 20/20° C; B P, 94.9° C (760 mm); Fr P, —81-2° C; sol in water, 0.82% at 20° C. Chemical properties: can be homopolymerized, or copolymerized with vinyl acetate, higher vinyl esters, and acrylic esters by conventional polymerization techniques. Suggested uses: preparation of resins for use as surface coatings, textile sizes, and adhesives. Availability: commercial quantities.

VISCOLAN C
(Pioneer)

An oil to be used in the manufacture of viscose rayon and cellophane, to improve physical and chemical properties. It is stated that, by using this oil, ripening time of the viscose can be shortened by 12 to 20 hours.

WARCO* 377
(Warwick)

This product is reported to be a very effective single package water repellent of the nondurable type. It is used primarily as a finish on cotton drapery fabric and on cotton dress goods but may be applied to other styles of cotton fabrics as well where a nondurable repellent is desired.

*Registered trade-mark

WARCOPEL* C
(Warwick)

A durable type of water repellent for use alone or as an adjunct to resin finishes. It is specially recommended by the manufacturers for cotton, When used with various resins the hand may be varied while retaining the desirable water-repellent characteristics.

*Registered trade-mark

WARCOSET* 380
(Warwick)

This product is a carbamide formaldehyde reactant having a low free formaldehyde content which simplifies handling and processing. The treated fabrics also normally have less odor than with conventional reactants of this type. It is stated that it may be applied to cotton, viscose, and blends providing excellent stability and crush resistance without adversely affecting light fastness of dyestuffs.

*Registered trade-mark

WICABOND AR
(Wica)

Film-forming styrene resin emulsion for use as a substitute for polyvinyl acetate, polyvinyl alcohol and rubber latex. Also recommended for antislip finishing.

WICADULLER 3140
(Wica)

Economical delusterant for use in starch or gum baths. It is said to impart light reflectance properties and eliminate surface sheen at almost negligible cost.

WICADULLER 3192
(Wica)

This cationic delusterant was developed to meet the recent needs for even and uniform applications to synthetics. It is stated that its high degree of light reflectance and softness of handle is of special interest to processors. Is used with or without resins and other additives.

WICAFIX GP
(Wica)

A newly developed fixative for application to direct-dyed yarn and piece goods. It is stated that minimum effect on light fastness is obtained with excellent low crocking. Compatibility with other resins and finishes is good with little effect on hand and body.

WICALOID FC
(Wica)

Complete rubber latex compound for coating textiles before or after scouring and dyeing. The latex is adjusted for ready-to-use application and is said to differ from other accepted compounds in that brightness of nylon and other fibers is not impaired. It is stated that light and heat resistance properties of cured films mark this material's excellence as back coating for boucles, friezes and flat goods.

WICAPEL PM
(Wica)

An aluminum salt-wax emulsion for water repelling all types of fibers where permanency is not required. The strongest point of its development is based upon its unusually low cost.

WICAPEL RESIN GP
(Wica)

A durable (curing type) water repellent finish for cotton, rayon and blends. Excellent spray ratings are said to be obtained when cured with Catalyst AS at temperatures normally expected for regular resin finishes. "Wash and Wear" formulations include Wicapel Resin GP with Wica Resins 528, 551 and 620.

WICA PHOSPHORYLAMIDE
(Wica)

This new concept in permanent flame proofing of textiles and paper products is supplied as 50% water solution. Padded cold and dried, the cure follows at 250° F and reacts with cellulose to form a new, different molecular

structure. No catalyst or resin addition is necessary and the goods are rinsed to control handle and body. Phosphorylamide is compatible with most finishing chemicals and compounds.

WICA RESIN 620
(Wica)

Low cost (low chlorine retentive) cyclic urea-formaldehyde resin said to possess exceptionally good stabilization, crease resistance and crease recovery properties. Recommended by the manufacturers especially for cottons and cotton blends.

WICA RESIN CET
(Wica)

Acetylene urea-formaldehyde resin for application to rayon and blends. It is stated that this durable finish withstands more than 30 washings and effects to light fastness of direct dyed goods are least of those checked from a large group of current materials.

WICASET 500
(Wica)

An acrylic film-forming emulsion for coating automotive fabrics and other goods that require maximum light and heat aging properties. It is stated that practically no change in hand of coated goods is experienced and the emulsion may be extended up to 50 parts with inert fillers. Light fastness and shade of dyed goods are said to be unaffected. The clear, transparent film does not mark the face appreciably if allowed to penetrate. It is claimed that adhesion to synthetics is superior and curing is not required.

WICA SODIUM POLYACRYLATE
(Wica)

A 10% solution of exceptionally high molecular weight sodium polyacrylate for thickening-stabilizing latex and resin emulsions. Viscosity and pH drifts are said to be eliminated or minimized by complete stability of the solution. The material is also used in suspending and dispersing inert pigments.

WICA SOFTENER APT
(Wica)

Amphoteric softener for application to goods of all types. APT is very soluble and easily applied in resin bath. It is stated that goods that are ordinarily difficult to soften will respond well to this non-yellowing softener. This product is well received for use in napping preparations and general lubrication.

WICA SOFTENER 100
(Wica)

100% active amphoteric softener for use in resin baths in chemical and mechanical finishing. It is said to have extreme high resistance to heat and light. Is used in size formulations where non-yellowing properties are required. Its use also includes economical softening of cotton, synthetics and lubricating difficult stocks.

WICA SOFTENER 100 LIQUID
(Wica)

This 100% active liquid softener can be used safely over a wide pH range and in conjunction with a variety of finishing agents (including resins). It is said to have highly durable softening properties on synthetics and cottons.

WICATEX 1010
(Wica)

This self emulsifying fatty base is used in all types of softening and lubricating finishes where durability is not required. Special interest is in preparations for napping. Antistatic properties are imparted.

WICATEX 3234
(Wica)

Sanforized finish that allows full control of hand and body. It is stated that this 80% active finishing compound has been highly accepted for denims, drills, twills, sateens and many other cottons. This product is used alone or in conjunction with a variety of materials.

WICATEX RW
(Wica)

A resin-wax emulsion for coating textiles. The material dries to form films of medium firmness and can be incorporated in backfilling mixes without stiffness.

WICA WEIGHTER #1
(Wica)

A weighter finish for adding body and weight to cotton woven and knit goods. Its very carefully balanced composition is said to be particularly valuable to finishers of denims, twills, drills, corduroy and napped goods where "limping" of handle must be avoided.

WICA WEIGHTER #2
(Wica)

Organic finish for use in imparting weight to cotton goods with minimum effect on hand.

WIXOL ANTISLIP
(Wica)

A plasticized polystyrene emulsion for antislip finishing of synthetics and cottons. Properties imparted are said to be durable with good resistance to light and heat.

COLORING MATERIALS

ACETOQUINONE LIGHT BROWN JRL
(Francolor)

A new addition to the line of acetate rayon colors. It is slightly redder in shade than Acetoquinone Brown 2BN and is distinguished by its better fastness to light and to wet fastness. This color can also be completely discharged to white. It also is said to have good fastness to atmospheric fading.

AHCOVAT* SOLUBLE GREEN I2G POWDER
(Arnold, Hoffman)

An important addition to the family of Soluble Vat Jade Greens. It is particularly of interest as a basis for the production of Kelly greens, using Soluble Vat Yellow GCN types. It is stated that, by using Ahcovat Soluble Green I2G, lesser amounts of the Soluble Vat Yellow GCN are needed,—a desirable feature as it is generally known that the latter dyestuff can cause catalytic fading on exposure to light in such combinations. The use of Ahcovat Soluble Green I2G in this combination is economically equivalent to that of the conventional Soluble Vat Green 1B types.

*Registered trade-mark

ALCIAN BLUE 7G
(Arnold, Hoffman)

Alcian Blue 7G is similar in dyeing and printing properties to Alcian Blue 8GX 300, but it is stronger, redder and brighter.

ALCIAN BLUE 8GX 300
ALCIAN YELLOW GX
(Arnold, Hoffman)

Alcian Blue 8GX 300 provides hues varying from delicate sky turquoise tints to deep saturated tones of rich peacock. This new dyestuff possesses distinct technical advantages over the old Alcian Blue 8GN 150, and can be dyed by methods prescribed for the latter-mentioned dyestuff.

Alcian Yellow GX is recommended by the manufacturers as a shading color in the dyeing and printing of Alcian Blue 8GX 300.

AMANIL* SUPRA GREY LLG
(American Aniline)

A new fast to light direct color especially designed for use on cotton and viscose rayon fibers. Fastness to light when dyed direct is said to be excellent. It is stated that aftertreatments with resins, with and without metallic salts yields dyeings of very good wash fastness. Effect on fastness and shade is slight. Synthetic fiber effect threads are stained to a minimum.

*Reg TMUS Pat Off

AMANIL* SUPRA ORANGE GLL
(American Aniline)

A new fast to light substantive azo dyestuff suited for the dyeing of cotton and viscose rayon fibers. Light fastness is said to be excellent. Aftertreatment with resins and metallic salts yields dyeings said to be of very good wash fastness. Light fastness and shade change is very small. Synthetic fiber effect threads are stained to a minimum.

*Reg TMUS Pat Off

AMANIL* SUPRA YELLOW 2RLL
(American Aniline)

A new fast to light direct azo dyestuff suited for the dyeing of cotton and viscose rayon fibers. Excellent light fastness is said to be only slightly effected by resin and metallic salt aftertreatments. Synthetic fiber effect threads are stained to a minimum.

*Reg TMUS Pat Off

AMANTHRENE* BLUE BCL DISPERSCON POWDER 400%**
(American Aniline)

An anthraquinone vat dyestuff of this well-known type in powder form. It is stated that exceptional dispersion and other physical properties make the color ideally suited for use in circulating machines as well as jig and continuous operations. It may be used for dyeing cotton and viscose rayon. Fastness properties are said to be excellent.

*Reg TMUS Pat Off
**Pat applied TM

AMANTHRENE* DARK BLUE BO DISPERSCON POWDER 200%**
(American Aniline)

An anthraquinone vat dyestuff in powder form said to possess outstanding dispersion and other physical properties. It is recommended by the manufacturers for dyeing of cotton, viscose rayon, and linen. It is well suited for use in circulating machines of all types as well as pad-jig and continuous operation. This color is especially useful for dyeing economical navy shades said to be of excellent fastness.

*Reg TMUS Pat Off
**Pat applied TM

AMANTHRENE* OLIVE GREEN B DISPERSCON POWDER 300%**
(American Aniline)

An anthraquinone vat dyestuff in powder form said to possess excellent dispersion and other physical properties. It is stated that outstanding fastness to light and excellent wet fastness make this color especially suitable for the dyeing of cotton and viscose fibers for military and civilian use. It may be used in circulating, jig, and continuous machines.

*Reg TMUS Pat Off
**Pat applied TM

AMANTHRENE* ORANGE RRT DISPERSCON** POWDER 250%
(American Aniline)

An anthraquinone vat dyestuff in powder form said to possess outstanding dispersion and other physical properties. It is suited for dyeing cotton and viscose rayon in circulating machines as well as jigs and continuous equipment. Fastness properties are said to be excellent.

*Reg TMUS Pat Off
**Pat applied TM

AMANTHRENE* SUPRA DARK BROWN FCF PASTE
(American Aniline)

A new anthraquinone vat dyestuff designed for the production of economical shades of brown on cotton, linen and viscose rayon in their various forms. It is stated that excellent dispersion properties make it well suited for package machine, pad-jig and continuous dyeing. All around fastness properties are said to be excellent.

*Reg TMUS Pat Off

AMANTHRENE* SUPRA DIRECT BLACK AP PST
(American Aniline)

A new direct dyeing anthraquinone vat dyestuff especially designed for the production of economical shades of black on cotton, viscose rayon, and linen in their various forms. It is stated that excellent dispersing properties make it well suited for package dyeing as well as for pad-jig and continuous application. All around fastness properties are said to be excellent.

*Registered TMUS Pat Off

ANSIGEN* BLACK IDB DBL SOL
(Ansbacher-Siegle)

This azoic color produces a black said to possess exceptional light fastness.

*Registered trade-mark

ANSIGEN* BLACK SI DBL SOL
(Ansbacher-Siegle)

This azoic color produces a black said to possess exceptional light fastness and maximum wet fastness.

*Registered trade-mark

ANSIGEN* BROWN PBT CONC SOL
(Ansbacher-Siegle)

An azoic brown which is said to be extremely fast to light, washing and dry cleaning.

*Registered trade-mark

ANSIGEN* RED RGB SOL
(Ansbacher-Siegle)

An azoic red which produces a deep brilliant shade. Cleanliness of shade is maintained in tints.

*Registered trade-mark

ANSIGEN* YELLOW GN SOL
(Ansbacher-Siegle)

This azoic solution produces a yellow which is said to show maximum strength while maintaining clean, green cast.

*Registered trade-mark

ANSITONE RED LDL (RB-60)
(Ansbacher-Siegle)

This product and the following Ansitones are resin-bonded pigments classified under the indicated RB numbers. These products can be applied to both cellulosic and synthetic fibers.

RED RDL (RB-63)

RED PR—This azo pigment has no prototype. It is claimed to be the only yellow shade red which is solvent resistant.

SCARLET YDL (RB-63)

BLUE GDL (RB-20)

GREEN JDL (RB-40)

GREEN 2JDL (RB-40)—A phthalocyanine pigment which is the yellowest shade available for textile application. This product is said to possess great versatility in blends.

YELLOW FDL (RB-90)

YELLOW RFDL (RB-90)

ORANGE SDL (RB-50)—This benzidine orange is said to produce an extremely clean yellow shade.

ORANGE RDL (RB-50)—A red shade benzidine orange designed for blending with Ansitone Orange SDL.

ORANGE ODL (RB-50)

AQUAPRINT® COLORS
(Interchemical)

Aquaprint Colors are Interchemical's improved water-dispersible pigment colors for fast-color printing cottons and synthetics. The colors in this series are applied to textiles in the form of pigmented oil-in-water emulsions or in the form of aqueous dispersions. They supplement Interchemical's Aridye® 400 Series Colors which are applied in the form of pigmented water-in-oil emulsions. The improved Aquaprint Colors are said to have excellent linting qualities and are nontarnishing, thereby eliminating one of the major problems encountered heretofore in machine printing with pigmented emulsions of the oil-in-water type.

Like Aridye Colors, the improved Aquaprint Colors are said to provide a wide range of brilliant shades which meet stringent consumer requirements for fastness to light, washing, crocking, and drycleaning. It is stated that they are especially useful for printing dress goods, suitings, draperies and curtains, and various other types of fabrics requiring a high degree of fastness. Selected colors in the series are said to provide excellent resistance to caustic cutout in plisse work.

Aquaprint Colors are suitable for both machine and screen printing on conventional types of equipment. For machine printing, Aquaprint Colors are generally applied in the form of oil-in-water emulsions; whereas for screen printing they are ordinarily used in the form of aqueous dispersions. Printing is carried out in the usual manner; no change in the regular set-up is necessary. The colors, as printed, are final in shade, permitting the printer to detect and correct any defects immediately and to keep the pattern in fit throughout a run.

Specific advantages of Aquaprint Colors are said to include exceptionally sharp marks and smooth blotches. It is stated that, because Aquaprint Colors are water-dispersible, they facilitate cleaning of equipment, including print rollers, furnishers, backgreys, blankets, screens, and other equipment.

Aquaprint Colors can be employed alone or alongside Aridye Colors, stabilized azoic dyes and aniline black in the same pattern to provide color combinations which would be difficult to produce in any other way. When used alone or alongside Aridye Colors, the fabric, after printing and drying, is merely heat cured at an elevated temperature to polymerize the synthetic resins used as bonding agents for the pigments. When used alongside stabilized azoic dyes and aniline black, the fabric, after printing, is subjected to the same type of aftertreatment normally employed for those dyes. In some instances this is followed by heat curing to provide maximum fastness.

The principal Aquaprint Colors include the following:

CHARTREUSE
YELLOW 2G
YELLOW R
YELLOW 2R
YELLOW K
ORANGE O
ORANGE R
ORANGE 2R
SCARLET 2Y
SCARLET Y
RED R
RED B
RED 2B
RUBINE 3B
VIOLET 3R
VIOLET 3RD
VIOLET 4B
ROYAL BLUE R
BLUE 2R
BLUE 2G
BLUE 3G
GREEN B
GREEN 2K
BROWN Y
BROWN R
BROWN 3K
BLACK K
GRAY 3B

ARIDYE® BLUE 5G
(Interchemical)

A new resin-bonded pigment color for fast-color printing cotton, rayon, acetate, nylon, Dacron, and other natural and synthetic fibers and blends. It is applied to textiles in the form of a pigmented water-in-oil emulsion. This color was formulated primarily for producing attractive aqua shades said to possess excellent all-round fastness. It is stated that Aridye Blue 5G is fast to light; it withstands 300 hours Fade-Ometer exposure. It is further stated that it is fast to washing; passes a No. 4 wash in accordance with A.A.T.C.C. Standard Test Method 36-54. It is also said to be fast to drycleaning either with carbon tetrachloride or perchlorethylene. Aridye Blue 5G is also an excellent color for printing cotton to be plissed; it does not cut out with caustic soda. It has excellent running properties. Color cuts have good stability.

ARIDYE® ORANGE OL
(Interchemical)

A new resin-bonded pigment color formulated especially for fast-color printing cotton, rayon, acetate, nylon, Dacron, and other natural and synthetic fibers and blends. It is applied to textiles in the form of a pigmented water-in-oil emulsion. It can be employed as a self-shade and for producing compound shades, and is especially useful for producing browns and tans. Aridye Orange OL is said to provide better fastness to light than conventional pigment printing oranges of like shade. It is reported to provide excellent fastness to washing, passing a No. 4 wash in accordance with AATCC Standard Test Method 36-54. In dark and medium shades it is said to pass the AATCC drycleaning test method, using carbon tetrachloride, and, in dark shades, it is suitable also to perchlorethylene. Aridye Orange OL is an excellent color for discharge printing since it is not affected by sodium or zinc sulfoxylate formaldehyde. This color has excellent running properties. Color cuts have good stability.

ARIDYE® VIOLET 3RD
(Interchemical)

A new resin-bonded pigment color formulated especially for fast-color printing cotton, rayon, acetate, nylon, Dacron, and other natural and synthetic fibers and blends. It is applied to textiles in the form of a pigmented water-in-oil emulsion. It is useful as a self-shade for producing rich, reddish-violet shades and also for shading and toning purposes. An outstanding feature of this color is said to be its excellent fastness to drycleaning, either with carbon tetrachloride or perchlorethylene. In addition, it is said to provide good fastness to light. It is stated that it is fast to washing, passing a No. 4 wash in accordance with AATCC Standard Test Method 36-54. Aridye Violet 3RD is an excellent color for printing cotton to be plissed; it does not cut out with caustic soda. It has excellent running properties. Color cuts have good stability. This color is offered also in Interchemical's Aquaprint® Series. The colors in this series are applied to textiles in the form of pigmented oil-in-water emulsions.

ARTISIL SCARLET GFL ULTRADISPERSED
(Sandoz)

Dyes acetate in brilliant yellowish scarlets said to possess exceptional light and wet fastness. It is further said to be fast to gas fading and sublimation. Used on nylon, polyester and acrylic fibers, with high temperature processes giving the best results on the latter. Triacetate fiber is said to be dyed fast to light and washing.

ATLANTIC NEUTRAZOIC® DYESTUFFS
(Atlantic)

Atlantic Neutrazoic Dyestuffs (pat appld for) are naphthol-salt combinations stabilized through the use of new compounds which are said to develop, almost instantaneously, in the Riegel Flash-Acid Ager* (pat appld for). The dyestuffs are available in standard strengths and azoic shades as solutions, double

*The Riegel Flash-Acid Ager is manufactured by Sims Metal Works, West Point, Ga., under license from Riegel Textile Corp. Inquiries should be addressed to Sims.

solutions and powders. No formula changes are required from presently used stabilized azoics. The Riegel Flash-Acid Ager is a small, compact, low-cost machine invented and used by the Riegel Textile Corp. The unit is geared to the take-off end of the print machine dry cans and operates at all printing speeds.

Material is printed, can dried, Reigel Flash-Acid Aged and swung into boxes at full speed, in one continuous operation. Immediate inspection can be made at the doffing end of the print machine. It is stated that washing (optional) is performed without concern for bleeding since Atlantic Neutrazoics are faster to washing than ordinary stabilized azoics. The use of Atlantic Neutrazoics, together with the flash-acid ager, is claimed to be the greatest step forward in high-speed, fast-color cotton printing since the development of stabilized azoics and pigments more than 20 years ago. It is stated that the increased speed and the reduction of seconds enable processors to affect substantial savings while producing prints of outstanding durability.

The following colors are available:
YELLOW GNX
YELLOW 2G
YELLOW GS
GOLDEN YELLOW R
ORANGE G
ORANGE IGR
ORANGE AS
ORANGE R
SCARLET RS
RED ITR
RED GS
RED R
RED FFBB
RED KB
BORDEAUX RN
BORDEAUX BN
CORINTH IB
VIOLET B
NAVY BLUE IR
NAVY BLUE IB
BLUE AS
BLUE D
BLUE BN
GREEN B
OLIVE BROWN IG
BROWN IR
BROWN IRRN
BROWN IB
BROWN IPT
BLACK-BROWN IT
KHAKI 3G
BLACK IT
BLACK FFM
BLACK 2B
BLACK FOR

AULABRITE* BLACK 6111 and 6112
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors, based on a carbon black pigment of a brown-black cast, dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The new colors are especially recommended by Aula for printing and pad dyeing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The prints obtained by the use of these colors range from jet black to a brown cast gray. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* BLACK 6121 and 6122
(Aula)

New additions to Aula Chemicals' line of Aulabrite colors contain carbon black pigment of a bluish cast, dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The new colors are especially recommended by Aula for printing and pad dyeing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The prints range from a dense bluish jet black to a bluish gray. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties. The colors are suitable for printing pastel gray shades.

*Registered trade-mark

AULABRITE* BLUE 6211 and 6212
(Aula)

Recent additions to Aula Chemicals' line of Aulabrite pigment colors based on phthalocyanine blue pigments of a slightly red top tone with a green undertone. They are supplied dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These new colors are recommended by Aula particularly for printing cotton, rayon, acetate, nylon, Fiberglas, and natural and synthetic fibers. Brilliant blue prints may be obtained with these colors. The prints are said to be fast to washing and dry cleaning, and to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* BLUE 6231 and 6232
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on a phthalocyanine blue pigment of a decidedly greenish cast dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* BLUE, AQUA 6251 and 6252
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on pure phthalocyanine pigments dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These colors are particularly suitable for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* BLUE, NAVY 6241 and 6242
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on a dianisidine blue pigment dispersed in an oil-in-water emulsion of a combination of thermoplasitc and thermosetting resins. The new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have good lightfastness properties.

*Registered trade-mark

AULABRITE* BLUE, ROYAL 6221 and 6222
(Aula)

Recent additions to Aula Chemicals' line of Aulabrite pigment colors based on an indanthrene blue pigment dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These colors are particularly suitable for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* BROWN 6311 and 6312
(Aula)

Recent additions to Aula Chemicals' Aulabrite line of pigment colors based on a metallized azo brown pigment dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The prints are said to be fast to washing and dry cleaning, and to be crock resistant and have good lightfastness properties. However, the colors are not recommended for use wherever high curing temperatures are used or on Fiberglas or under "Quilon". In general, they should be used only where brilliant shades are required and where there is a close control of curing temperatures. These colors are not suitable for plisséing.

*Registered trade-mark

AULABRITE* BROWN 6321 and 6322
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on an inorganic brown pigment dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* BROWN 6331 and 6332
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on a brilliant indanthrene brown pigment dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The colors are said to be particularly suitable for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* BROWN 6341 and 6342
(Aula)

Recent additions to Aula Chemicals' Aulabrite line of pigment colors based on a metallized azo brown pigment of orange-brown shade. It is supplied dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* GRAY 6131 and 6132
(Aula)

Recent additions to Aula Chemicals' line of Aulabrite pigment colors based on a furnace-type carbon black pigment, dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The colors are recommended by Aula for printing and pad dyeing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. Beautiful dark gray and pastel gray prints may be obtained with these colors. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* GRAY 6141 and 6142
(Aula)

Recent additions to Aula Chemicals' line of Aulabrite pigment colors based on a combination of a carbon black and a dianisidine blue pigment. It has a blue-gray cast and it is supplied dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The colors are recommended by Aula for printing and pad dyeing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The colors are suitable for printing bluish gray and oxford gray shades. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant even in the deepest shades, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* GREEN 6411, 6412, 6461 and 6462
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on phthalocyanine green pigments dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas and dry cleaning, and are said to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* GREEN 6421 and 6422
(Aula)

New additions to Aula Chemicals' line of Aulabrite pigment printing colors based on Pigment Green B dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have good lightfastness properties.

*Registered trade-mark

AULABRITE* ORANGE 6541 and 6542
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on a brilliant benzidine orange type pigment with a yellowish cast, dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* RED 6611 and 6612
(Aula)

New additions to Aula Chemicals's Aulabrite series of pigment colors based on a brilliant red pigment prepared by a special coupling of p-nitro-o-anisidine/Naphthol AS. The pigment has a bluish cast and is supplied dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The colors are recommended by Aula particularly for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* RED 6621 and 6622
(Aula)

New additions to Aula Chemicals Aulabrite line of pigment colors based on a brilliant red pigment of a special coupling of p-nitro-o-toluidine/Naphthol AS-D dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. The new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The prints are said to be fast to washing and to dry cleaning with Stoddard solvent or a naphtha, but should not be used where chlorinated solvents such as perchlorethylene are used as a dry cleaning fluid. The prints have fair lightfastness properties.

*Registered trade-mark

AULABRITE* RED-PINK 6631 and 6632
(Aula)

These are outstanding members of Aula Chemicals' newly developed Aulabrite 6000 Series of colors. They are based on a brilliant red pigment of an ITR/ITR coupling dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* RED VIOLET B 6711 and 6712
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on a brilliant red violet pigment of a bluish cast, dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have good lightfastness properties.

*Registered trade-mark

AULABRITE* RED VIOLET R 6721 and 6722
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on a brilliant red violet pigment of the indanthrene type dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have good lightfastness properties.

*Registered trade-mark

AULABRITE* SCARLET 6641 and 6642
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on a brilliant scarlet pigment prepared with Fast Scarlet G/Naphthol AS-D coupling, dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These new colors are recommended by Aula for printing acetate, cotton, rayon, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing, to be crock resistant even in deep shades, and to have good lightfastness properties. They may be used where they are to be subjected to dry cleaning with Stoddard solvent or naphtha, but should not be employed where chlorinated solvents such as perchlorethylene are used as dry cleaning fluids.

*Registered trade-mark

AULABRITE* VIOLET 6731 and 6732
(Aula)

New additions to Aula Chemicals' Aulabrite line of pigment colors based on a brilliant indanthrene violet pigment dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. These new colors are recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* YELLOW 6942
(Aula)

A new member of Aula Chemicals' Aulabrite line of pigment colors based on an inorganic ochre pigment dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. This new color is recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* YELLOW 6952
(Aula)

A new addition to Aula Chemicals' Aulabrite line of pigment colors based on a Lithosol Fast Yellow pigment of greenish cast dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. This new color is recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas, and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have excellent lightfastness properties.

*Registered trade-mark

AULABRITE* YELLOW 6962

A new addition to Aula Chemicals' Aulabrite line of pigment colors based on a brilliant benzidine-type yellow pigment dispersed in an oil-in-water emulsion of a combination of thermoplastic and thermosetting resins. This new color is recommended by Aula for printing cotton, rayon, acetate, nylon, Fiberglas and other natural and synthetic fibers. The prints are said to be fast to washing and dry cleaning, to be exceptionally crock resistant, and to have fair lightfastness properties.

*Registered trade-mark

BASF ACETATE DISCHARGE YELLOW 5RL
BASF ACETATE DISCHARGE YELLOW GRL
BASF ACETATE DISCHARGE RED GGL
BASF ACETATE DISCHARGE BLUE 3G
(Nova-BASF)

These four new colors are said to have exceptional brilliance of shade and very good fastness to light, producing excellent white discharge effects on acetate dyeings, applied by the normal dyeing procedure for acetate colors.

BENZO PURPURINE 4B CONC (C I 448)
(Sandoz)

One of the most economical of the reds used in paper, Benzo Purpurine 4BS Conc is a direct dye said to possess good light fastness and solubility. It is sensitive to the presence of acids. A pH of 6.0 or above brings maximum shade brilliance.

CALCOLOID* CPS VAT DYEING PASTES
(Cyanamid-Dyestuff)

Forty-eight new Calcoloid Dyeing Pastes featuring controlled particle size are now being manufactured. It is stated that each vat dye of the improved line of Calcoloid CPS Vat Pastes has an optimum particle size and shape which gives it optimum working properties for all types of application with cottons, viscose rayons, linens and blends.

The general advantages of the new Controlled Particle Size Calcoloid Vat Paste are claimed to be:

1. Unexcelled non-specking properties; 2. excellent pigment and leuco filtration properties; 3. fluid pastes which dilute and disperse easily and quickly, flow down off sides of containers and paddles cleanly, are nonflaking and nonsettling; 4. optimum particle size to give best application properties with each individual dye; 5. complete reduction obtained rapidly, without excessive quantities of reducing chemicals; 6. negligible content of nonvattable material.

Special application advantages obtained with Calcoloid CPS Vat Pastes are claimed to be:

1. *Pigment padding of cloth*—a. pigment padding baths show maximum resistance to aggregation and settling; b. dye particles penetrate cloth thoroughly; c. complete reduction and fixation in pad steam and other continuous procedures is obtained in a few seconds; d. minimum amount of nonvattable material to accumulate in reduction bath; e. excellent reproducibility of shades; f. maximum fastness and full money value; g. cleaning of equipment facilitated.

2. *Stock, beam and package dyeing*—a. excellent pigment dispersion; b. complete reduction and fixation; c. full money value and maximum fastness; d. minimum nonvattable materials; e. more uniform raw stock dyeing requiring less blending of stock.

3. *Jig, skein and other reduced dyeing applications*—a. rapid and complete reduction; b. ease of handling; weighing, dispersing, reducing, etc; c. excellent reproducibility of shade; d. excellent level dyeing properties.

These Calcoloid Vat Dyes are said to offer

*Trade-mark

the typical colorfastness properties of the vat dye group. They are available in the following colors and strengths:

DIRECT BLACK PB DOUBLE PASTE
DIRECT BLACK MM DOUBLE PASTE
DIRECT BLACK TXN DOUBLE PASTE
BLACK BB DOUBLE PASTE
BLACK BBC DOUBLE PASTE
BLACK BNS DOUBLE PASTE
BLACK BNC DOUBLE PASTE
GRAY BD SINGLE PASTE
GRAY 2G DOUBLE PASTE
GRAY GD SINGLE PASTE
GRAY RD SINGLE PASTE
BLUE BLFD DOUBLE PASTE
BLUE BLFD SINGLE PASTE
BLUE GCD DOUBLE PASTE
BLUE RS DOUBLE PASTE
BLUE 2BD DOUBLE PASTE
DARK BLUE BO SINGLE PASTE
NAVY BLUE SINGLE PASTE
BROWN G DOUBLE PASTE
BROWN G SINGLE PASTE
BROWN 2G DOUBLE PASTE
BROWN 2GW DOUBLE PASTE
BROWN 2GW SINGLE PASTE
BROWN R DOUBLE PASTE
BROWN R SINGLE PASTE
BROWN RNB DOUBLE PASTE
BROWN BR SINGLE PASTE
COPPER BROWN SINGLE PASTE
OLIVE R DOUBLE PASTE
OLIVE R SINGLE PASTE
JADE GREEN N SUPRA DOUBLE PASTE
JADE GREEN N DOUBLE PASTE
OLIVE GREEN BN DOUBLE PASTE
OLIVE GREEN BN SINGLE PASTE
OLIVE GREEN BD SINGLE PASTE
OLIVE T SINGLE PASTE
OLIVE TRR SINGLE PASTE
GOLDEN ORANGE GFD SINGLE PASTE
GOLDEN ORANGE 3G SINGLE PASTE
GOLDEN ORANGE RRTD SINGLE PASTE
PINK FFD SINGLE PASTE
VIOLET 4RD SINGLE PASTE
VIOLET 6RD SINGLE PASTE
FAST YELLOW SINGLE PASTE
FAST YELLOW GL SINGLE PASTE
YELLOW GCD SINGLE PASTE
YELLOW GCB SINGLE PASTE
YELLOW PG DOUBLE PASTE

"CAPRACYL"* VIOLET BD
(Du Pont)

A premetallized acid dye producing brownish-violet shades on nylon and wool. It is a desirable shading element in the production of tan, brown and gray shades. It is stated that this product possesses very good wet and lightfastness properties, has a slow, uniform dyeing rate and good compatibility with other dyes when used in combinations.

*Registered trade-mark

"CAPRACYL"* YELLOW GW
(Du Pont)

A neutral-dyeing metallized acid dye especially suited to the continuous dyeing of wool rawstock and for dyeing filament or spun forms of nylon. It produces bright, greenish-yellow shades on either fiber and is said to have very good fastness to light and wet processing. It is suitable for use on materials intended for suitings, shirtings, carpetings and automotive fabrics.

*Registered trade-mark

CELLITON* BLUE GAFD
(General Dyestuff)

A straight disperse dye claimed to give bright, strong, medium blues on acetate characterized by excellent dischargeability, high resistance to gas fading, and good affinity at 175° F. These properties are reported to have given this product an important place in the iig dyeing of dress, necktie, and other fabrics for which moderate light fastness is adequate.

*Registered trade-mark

CHLORANTINE* FAST NAVY BLUE RLL
(Ciba)

A direct dyeing, slightly reddish navy shade, it is stated that this new dye has very good solubility, 100 Fade-Ometer hours light fastness, and good wash fastness when aftertreated.

*Registered trade-mark

CHLORANTINE* FAST RUBINE WLL
(Ciba)

This direct color yields wine shades on cotton and rayon. It is stated that it has high color strength, and offers good money value with excellent light fastness when dyed direct or aftertreated. Wash fastness and water bleeding following urea-formaldehyde treatment are said to be good. Acetate and nylon reserves are strong.

*Registered trade-mark

CHROME FAST COLORS
(Francolor)

The latest dyestuffs in this line are:
CHROME FAST OLIVE BL (Pr 254)
CHROME FAST KHAKI N
CHROME FAST BROWN REN (Pr 203)
CHROME FAST GREY JL (Pr 203)

These colors are said to have good all-around general fastness and in the case of Chrome Fast Olive BL, Chrome Fast Khaki N, Chrome Fast Brown REN, are of particular interest in the production of light-fast shades of olive, khaki and brown. Chrome Fast Grey JL, the countertype to Chrome Black Blue G, possesses the same fastnesses but offers in addition very good solubility and level dyeing properties.

CIBALAN* BLUE FBL
(Ciba)

Dyes a medium, slightly reddish blue shade, said to possess good fastness to light and washing. Applied by neutral-dyeing Cibalan procedure to wool, nylon and silk, with good reserve of most synthetic fibers.

*Registered trade-mark

CIBALAN* BRILLIANT RED BL
(Ciba)

The brilliant red shade of this new Cibalan dye for wool, nylon and silk is unique for this class of dye. Recommended for use with Cibalan Brill Yellow 3GL and Cibalan Brill Blue GL for range of bright colors said to possess good fastness. Neutral-dyeing; shows good union on wool and spun nylon; very little stain on most synthetics.

*Registered trade-mark

CIBALAN* YELLOW GL
CIBALAN* BROWN 2RL
(Ciba)

Two new members of the well-known Cibalan series for wool, nylon and silk, one of these is a golden yellow shade, the other a reddish brown. Both are said to exhibit very good fastness to light, washing and perspiration.

*Registered trade-mark

CIBANONE* BRILLIANT ORANGE RK PASTE
(Ciba)

An anthraquinone vat dye yielding bright reddish orange shades said to be of good color strength. It is stated that the dye has good fastness to light, to washing, to chlorine and to weathering.

*Registered trade-mark

CIBANONE* OLIVE S3R PASTE
(Ciba)

Dyes cotton and rayon in a reddish olive shade said to be of highest fastness. Excellent weathering fastness and vat dyeing properties are reported.

*Registered trade-mark

CIBANONE* RED BROWN RRF PASTE
(Ciba)

This new anthraquinone vat dye offers a clean, reddish brown shade said to be of excellent fastness. Especially good for heavy shades. Dye is very stable in reduction and may be applied at normal or elevated temperatures.

*Registered trade-mark

CIBANONE* YELLOW LGR PASTE
(Ciba)

A new anthraquinone vat dye with a golden yellow color said to have unusually good light fastness. It is reported to offer level dyeings of good wash fastness. Exhausts on tone in continuous dyeing to make possible good shade control in long run.

*Registered trade-mark

CUPRODIAZOL COLORS
(Francolor)

These are direct colors for cotton and viscose which are claimed to have outstanding light and wet fastness after treatment with Fixogene TN liquid extra and a slight addition of copper sulfate. These colors are said to have improved wet fastness extended to severe washing at 200° F. The following is a list of the newer Cuprodiazol range:
Light Violet 2BL
Light Bordeaux BL
Light Green 2J
Light Blue NL
Light Navy Blue R

CUPROFIX NAVY CLW paf
(Sandoz)

Direct dye for cotton and viscose said to possess extraordinary wash and other wet fastness when aftertreated with Cuprofix. Good solubility makes it suitable for all types of dye application, including padding of full shades. Lightfastness, in daylight or Fade-Ometer, on cotton or viscose, 7-8.

CUPROPHENYL* BROWN 6GL (PATENTED)
CUPROPHENYL* YELLOW 3GL (PATENTED)
(Geigy)

The latest additions to the series of substantive azo colors for rayons and cottons introduced a few years ago under the designation "Cuprophenyl". It is claimed that these dyestuffs when applied as ordinary direct colors and given a simple aftertreament with copper sulfate and acetic acid produce shades with an exceptionally high degree of washing and light fastness and in some instance even approach vat colors in these respects. The entire range of Cuprophenyls are well adapted for subsequent finishing with urea-formaldehyde resins.

*Registered trade-mark

DEORLENE* BRILLIANT YELLOW 5GL
DEORLENE* BRILLIANT RED R
DEORLENE* BLUE BR
(Ciba)

These three basic dyes for Orlon and Acrilan offer interesting shades, a bright, greenish yellow; a brilliant rich red, and a royal blue respectively. It is stated that fastness is good, and the brilliant colors permit a number of attractive fashion shades.

*Registered trade-mark

DIAZAMINE FAST SCARLET 3GWL PAT
(Sandoz)

This dye is believed by the manufacturers to be the only diazo scarlet available which excels in brightness, fastness to light (for its class of color), and perfect dischargeability both neutral and alkaline. Its light-fastness on spun viscose is appreciably increased by U-F resin treatment.

DIAZOL LIGHT COLORS
(Francolor)

This is a line of fast to light direct colors for dyeing cotton, viscose, and linen. When dyed on cotton viscose union materials, they are said to yield fast bright clean shades. Their wet fastness is greatly increased by after treating with Fixogene TN liquid extra. The following is a list of the newer Diazol Light types:
PURE BLUE 3JLN (CI 443)
GREEN BL (CI 425)
GREY 6BL (Pr 379)
TURQUOISE JL (Pr 278)
RUBINE 2BL (CI 491)
PURE BLUE FF2JL (Pr 26)
BROWN 8RL

DIAZOPHENYL* FAST SCARLET GL
(Geigy)

An exceptionally bright yellowish developed scarlet, this product greatly extends the range of "Diazophenyl" colors. It is reported to be level dyeing with excellent migration and good build-up, especially on rayon, and dischargeability. It is also reported to have very good wet fastness and fairly good lightness for a D & D color. It reserves acetate and is said to be suitable for UF resin finishes, exhibiting virtually no change in shade or light fastness.

*Registered trade-mark

DIPYRAZO BLUE DB
(Pharma)

A substantive blue for cotton and viscose. A redder and brighter shade than Dipyrazo Dark Blue B with all its excellent properties.

DIPYRAZO BROWN RT
(Pharma)

A substantive color, equally good for cotton and viscose rayon. It is useful both direct and developed with beta naphthol. A deep tile red of excellent wash and light fastness is said to be obtained. White acetate reserves are obtained. The product may be aftertreated with resins, giving improved properties. It is dischargeable both by neutral and alkaline methods.

DIPYRAZO DARK BLUE B
(Pharma)

A substantive blue for both cotton and viscose. The product can be used for direct application and also diazotized and developed with beta naphthol. The developed shade is claimed to have unusually high wash fastness, superior to the best market types. The light fastness rating is L6 on rayon and L5 on cotton. It is stated that both neutral and alkaline discharges are excellent and that all wet properties are excellent. Acetate is reserved. The product may be aftertreated with urea formaldehyde and Resimine type resins with beneficial results.

DIRECT FAST SCARLET 4SWN
(Ciba)

This bright red direct dye is said to have excellent solubility and to give clean attractive colors on cotton, spun rayon and paper.

DU PONT PAPER WHITE BP
(Du Pont)

A fluorescent whitening agent developed for use on paper by either beater or surface application. It has good solubility up to 5.0% in water. Du Pont Paper White BP can be added dry to the pulp in the beater or pulper in quantities ranging from 2.0 to 10.0 pounds per ton of pulp. This product can be used to brighten sized papers by adding it to the pulp slurry before the addition of size and alum. It is stated that it is particularly effective when used in surface applications and can be applied in all types of equipment currently used for applying either a water or surface sizing solution.

ERIO ANTHRACENE RUBINE 2BF
(Geigy)

A bright shade of rubine, this product is said to have a slow drawing rate with good migration. It is reported to be exceptionally level dyeing making it very suitable for piece goods and yarn dyeing. Light fastness is reportedly good on both wool and nylon.

FAST ACID L COLORS
(Francolor)

New acetic acid dyeing colors which are similar to milling colors in many respects but are claimed to have a much greater fastness to light, water, washing and perspiration. These colors have identical exhaustion rates thus making them behave in a homogenous manner. They have good fastness to storing. They are recommended by the manufacturers for use in the dyeing of wool in loose form or yarn for the manufacture of blankets. The following is a list of the present range:

ACID FAST YELLOW 5JL
ACID FAST RED BRL
ACID FAST BLUE JL
ACID FAST RED 4BL

FAST CHROME I COLORS
(Francolor)

Special chrome colors produced to yield fast shades on wool for vigoureux printing. These colors are said to be particularly fast to water during wear and during manufacturing. It is stated that they possess good all-around fastness and are particularly fast to light. Their solubility has been specially improved for ease of application. Chrome Fast I colors are nonfoaming for trouble free vigoureux printing. The following special vigoureux printing colors are now available:

CHROME FAST FLAVINE JI EXTRA (CI 219)
CHROME FAST YELLOW JR I EXTRA (CI 40)
CHROME FAST ORANGE RL I EXTRA (Pr 457)
CHROME RED ECBI EXTRA (CI 652)
CHROME FAST BORDEAUX BI DOUBLE
CHROME BRILLIANT VIOLET 2RI EXTRA
CHROME NAVY BLUE 2RI EXTRA (Pr 319)
CHROME SKY BLUE BI DOUBLE (CI 1088)
CHROME BRILLIANT BLUE 2JI DOUBLE (Pr 144)
ALIZARINE GREEN JI EXTRA (CI 1078)
CHROME FAST BROWN RLI EXTRA (Pr 298)
CHROME FAST BROWN EBI EXTRA (Pr 14)
CHROME FAST BROWN RENI EXTRA (Pr 203)
CHROME FAST BROWN 2RI EXTRA (CI 98)
CHROME FAST GREEN BI DOUBLE
CHROME BLUE BLACK RFI CONC (CI 202)
CHROME FAST BLACK TSI EXTRA CONC (CI 203)
CHROME FAST BLACK ASI CONC (CI 204)

FAST RED BDL (RB-60)
(Ansbacher-Siegle)

This product and the following "Base Dispersions" are semi-finished colors with the same properties as the corresponding Ansitone.

FAST RED BDR (RB-63)
FAST RED BDP
FAST SCARLET BDY (RB-63)
FASTOLUX* BLUE BDG (RB-20)
FASTOLUX* GREEN BDJ (RB-40)
FASTOLUX* GREEN BD2J (RB-40)
RADIANT YELLOW BDF (RB-90)
RADIANT YELLOW BDRF (RB-90)
FAST ORANGE BDS (RB-50)
FAST ORANGE BDR (RB-50)
FAST ORANGE BDO (RB-50)

*Registered trade-mark

FAST RED KL BASE
(General Dyestuff)

A new, straight, diazotizable base offered for the production of especially brilliant pink and red dyeings on cotton and rayon by coupling with Naphthol AS-LC or AS-ITR. Light to full shades are said to display good to very good fastness to light, excellent fastness to washing, good fastness to chlorine, and excellent dischargeability.

FAST RED SALT FRN
(General Dyestuff)

A diazotized amino base which is reported to have considerably improved stabilization in comparison with the older FR brand and therefore better stability in a compounded print paste or in a solution for coupling naphtholated cotton and rayon textiles in azoic printing and dyeing, respectively. Brighter shades are said to be obtained with the new purer product than with the old.

FAST SCARLET SALT GG SUPRA
FAST RED SALT ITR SUPRA
FAST RED SALT AL SUPRA
FAST RED SALT RL SUPRA
FAST RED SALT B SUPRA
FAST GARNET SALT GBC SUPRA
(Progressive)

New fast color salts which are said to produce excellent results with slow-coupling Naphtols such as Naphtol AS-BT(DB), Naphthol AS-KN, Naphtol AS-LB, and Naphtol AS-SG. The high coupling energy of the new "Supra" brands is said to permit full and level dyeings on packages not obtainable heretofore.

FASTUSOL* YELLOW LEFC-CF
(General Dyestuff)

A straight, direct dyestuff, claimed to be unsurpassed in light fastness by any other direct dye. It gives bright, reddish-yellow shades on cotton and rayon, which are said to be suitable for resin finishing. Acetate, nylon, Dacron polyester, and acrylic fibers are left clean in dyeing; and wool also, if Katanol* WB Conc is present.

*Registered trade-mark

FASTUSOL* YELLOW LFGRL-CF
(General Dyestuff)

A new, straight, economical direct dye, which is said to give vivid yellows on cotton and rayon as fast to light as dyeings of the considerably redder Fastusol Yellow LEFC-CF. It is suggested for draperies, carpets, and upholstery; and, for dress fabrics that are to be anticreased, especially when synthetic threads are to be left clean.

*Registered trade-mark

HELIOGEN* BLUE BSWN-ND POWDER SPECIAL
(General Dyestuff)

A copper phthalocyanine blue pigment in the form of a water-dispersible powder said to be standardized without an electrolyte but containing both an anion-active dispersing agent and a nondusting agent. It is claimed to disperse most readily without dusting and is suggested for coloring paper, water-system paints, and rubber latex without further processing when excellent light fastness and stability are desired.

*Registered trade-mark

HELIOGEN* GREEN GB POWDER
(General Dyestuff)

A straight copper polychorophthalocyanine claimed not to crystallize at all in aromatic solvents and to contain a negligibly low content of manganese and ionizable copper. It is suggested for use as a soft-grinding powder in manufacturing printing inks, lacquers, and enamels, and for coloring rubber, other elastomers, and plastics.

*Registered trade-mark

HELIASOL COLORS
(Francolor)

These belong to the anthracene class of colors for dyeing of cotton and viscose piece goods by pigment pad or jig method. They are also used on yarn in package dyeing machines. These colors are easily wetted out and even at low temperature give a pseudo solution facilitating the preparation of the padding bath. Due to their good solubility, they are recommended by the manufacturers for package dyeing in package machines. These colors are said to possess excellent all-around fastness. The following is a list of the current Heliasol range:

BROWN R POWDER
KHAKI 3R POWDER
OLIVE R POWDER
YELLOW 5 CL POWDER (Pr 9)

INDANTHRENE* BLUE CGKWP EXTRA CONC POWDER
(General Dyestuff)

A new straight, anthraquinone vat dyestuff, which is reported to dye bright blues on cotton and rayon, characterized by excellent fastness to chlorine and washing and by very good fastness to light even in pale shades. Excellent pigment quality is said to permit application by pigment padding and by circulating machines before reduction.

*Registered trade-mark

INDANTHRENE* BRILLIANT ORANGE GR EXTRA PASTE FINE
(General Dyestuff)

A straight vat dyestuff for dyeing and

*Registered trade-mark

printing cotton and rayon, which is claimed to be characterized by brilliance of shade, very good fastness to light, chlorine, and severe washing, and very good stability to overreduction. Excellent pigment quality is said to permit circulation in package machines before reduction and pigment padding for continuous dyeing.

INDANTHRENE* GREY RA INFRA PASTE
(General Dyestuff)

A new anthraquinone vat dye, which is reported to be convenient for gray self shades of desirable tone on cotton and rayon. It is claimed to have very good fastness to chlorine and washing and excellent-to-outstanding fastness to light in full grays. Continuous pigment, pigment-circulation, vat-acid, and reduction methods may be used for application.

*Registered trade-mark

INDANTHRENE* PRINTING BROWN HRR SUPRAFIX PASTE
(General Dyestuff)

A new, straight, modified-anthraquinone vat dye, which is said to have very good working properties, for printing bright reddish browns of excellent light, chlorine, and wet fastness on cotton and rayon. Economy and maintenance of shade upon resin finishing are claimed for this dyestuff.

*Registered trade-mark

INTERCHEM ® BLUE GSFR
(Interchemical)

A new highly dispersed acetate dye developed primarily for dyeing Dacron in wool-Dacron blends with minimum staining on wool. The shades produced on Dacron are characterized by their clean, bright blue shades which are said to possess a high degree of fastness to light, washing, drycleaning, perspiration, hot pressing, and sublimation. Interchem Blue GSFR is important also for producing full, bright shades on acetate which are said to possess good fastness to both gas fading and sunlight. In addition, it provides good fastness to washing, drycleaning, and sublimation on acetate fabrics. This dye can be employed also for dyeing Acrilan, Arnel, and Dynel.

INTERCHEM ® PINK GSF
(Interchemical)

A new highly dispersed acetate dye developed specifically to provide a high degree of fastness to both gas fading and sunlight on acetate. In addition, it also is said to provide good fastness to washing, drycleaning, and sublimation. It is useful as a self-shade and in combinations with other Interchem GSF Dyes for dyeing or printing gas-fast, sunfast shades on acetate fabrics from pastels to blacks. This dye can be applied either on jigs or boxes at temperatures from 160-190° F. The color yield is particularly good at temperatures of about 185° F, with good exhaustion, pile on, and level dyeing properties. It is suitable for application printing, and can be employed for dyeing dischargeable ground shades. Although Interchem Pink GSF was developed primarily for application to acetate, it is also an important color for dyeing Arnel.

IRGALAN* BROWN F L 100%
IRGALAN* BLUE R L (PATENTED)
IRGALAN* BRILLIANT GREEN 3GL
IRGALAN* YELLOW FGL (PATENT APPLIED FOR)
(Geigy)

The Irgalan range of colors has been expanded by the addition of the above products. These new types are said to possess the same extremely high all around fastness properties of the previous colors in the series, and are said to approach or exceed in this respect the fastest wool colors used heretofore. The manufacturer also states that, not only do these new additions possess almost the identical fastness properties of the preceding Irgalans, but they draw and work exactly alike as the older colors and with each other, thus enabling the dyer to use them in combination like a homogeneous dyestuff. It is further said that the same evenly penetrated, level results are obtained with these new colors on all types of woolen yarns and piece goods. They are also well adapted for use on spun and filament nylon and on real silk, having the same high quality fastness on these fibers as on wool.

*Registered trade-mark

IRGANOL* BRILLIANT YELLOW 3GLS
(Geigy)

Bright, greenish shades of yellow with all around good fastness, levelness the manufacturer states can be achieved on wool, silk and nylons. Although not a metal complex dyestuff the name Irganol signifies this product has similar dyeing characteristics and fastness properties to the Irgalans and can be used in combinations with those colors for shading or as a self shade to supplement and extend the range of shades. The new color is said to draw evenly and exhaust very well from a neutral or weak acid bath and to reserve cellulosic fibers thus making it a well adapted dyestuff for cotton and/or rayon/wool blends.

*Registered trade-mark

LANASYN DARK VIOLET RL paf
(Sandoz)

Economical, lightfast base for dark browns and maroons. Fastness to daylight, medium shade on wool, 6-7, Fade-Ometer, 6. Ratings on nylon reach 7 in daylight and Fade-Ometer. Fastness passes automobile fabric water tests.

LANASYN BROWN GL
(Sandoz)

Neutral dyeing, metalized dye for wool, silk, and nylon. Fastness properties said to be high enough for men's wear:—light, perspiration, fulling, carbonizing, decatizing. It is stated that this brown has high wet fastness and extreme fastness to light on nylon, suggesting automotive use. Daylight fastness, 6-7; in Fade-Ometer, 6.

LANASYN BROWN GRL paf
(Sandoz)

Low in cost. Fastness: medium shade on wool, daylight 7. Fade-Ometer 6.

LANASYN GREY BLR
(Sandoz)

A new Lanasyn type slightly redder than the older Grey BL, it is reported to exhibit slightly better light fastness. It is stated that it stands all usual mill processing and is especially fast to chlorination and decatizing.

LANASYN ORANGE RL
(Sandoz)

Light fastness on wool, medium shade, daylight 7, Fade-Ometer 6-7. Water fastness adequate for automotive requirements. Fastness to fulling is said to be particularly good for this type of dyestuff.

LANASYN RED BL paf
(Sandoz)

First bright metallized red. Yields a bluish red on wool, silk and nylon. Useful in self-shades and as a shading element for mode shades. Suitable for Vigoureux printing. It is stated that light fastness, on wool, medium shade, is daylight 6. Excellent wet fastness on wool or nylon is claimed.

LANASYN RED 2GL paf
(Sandoz)

For bright, yellowish red shades. It is stated that fastness to light (medium shade) is 6 in daylight and Fade-Ometer tests. Excellent fulling fastness is claimed. Dyes level on tippy wool.

LANASYN YELLOW GLN paf

For bright neutral yellow shades. It is stated that fastness on wool in medium shade is daylight and Fade-Ometer 7. Outstanding wet fastness for automotive upholstery fabrics is claimed. Suitable for Vigoureux printing.

LANASYN YELLOW 2GL
(Sandoz)

Metallized yellow said to afford excellent fastness properties at minimum cost. It is further said to be very stable to chlorination.

LANASYN YELLOW 3GL paf
(Sandoz)

Said to be the brightest greenish yellow among the metallized dyes. It is claimed to be unequalled for fastness to sunlight on nylon. Fastness on wool, medium shade, daylight and Fade-Ometer, 6-7. Meets all requirements for automotive fabrics.

"LATYL"* BLUE RB
(Du Pont)

Suitable for producing deep shades on "Dacron"*. Dyes levelly, does not tar, and, when used in browns, navies and blacks, produces shades said to possess good fastness to light and wet processing.

*Registered trade-mark

"LATYL"* ORANGE 3R
(Du Pont)

Yields brownish-orange shades and is recommended by the manufacturers as a component for tans, browns and grays. It is said to exhibit good fastness to light and wet processing. Can also be used on "Arnel" and has fair affinity for "Acrilan".

*Registered trade-mark

"LATYL"* SCARLET FS
(Du Pont)

It is stated that this dye builds up well, does not tar in the dyebath, is essentially nonsubliming and possesses good dyebath stability. Can be used alone for heavy scarlets or as the red component in maroon and deep brown shades. It is said to show good wetfastness and has adequate lightfastness for many end uses.

*Registered trade-mark

"LEUCOSOL"* BLACK G DOUBLE PASTE
(Du Pont)

An anthraquinone vat dye for printing cotton and rayon, which is said to be of particular interest for its outstanding lightfastness. Applied in full shades it approaches 320 hours' Fade-Ometer exposure with the additional advantage of showing a monotone fade at all concentrations. "Leucosol" Black G Double Paste is recommended by the manufacturers for printing drapery, upholstery, dress goods and similar materials. The product is said to retain its outstanding lightfastness when fabrics to which it is applied are subjected to resin treatments.

*Registered trade-mark

"LEUCOSOL"* GRAY FL PASTE
(Du Pont)

An anthraquinone vat dye for printing cotton or rayon. When printed on these fibers it is said to show good resistance to water spotting, good fastness to crocking, light and other color-destroying influences.

*Registered trade-mark

LUMATEX ® BRILLIANT YELLOW RR
(Nova-BASF)

A new, brilliant yellow shade which has been added to the range of Lumatex pigment colors, suitable for machine and screen printing, and said to possess excellent fastness to light and very good all around fastness, particularly to dry cleaning. It is also suitable for padding in conjunction with Lumatex Binder F.

METROSOL BLUE O
(Metro Dyestuff)

Leucoester of Indigo (CI 1178).

METROSOL GOLDEN YELLOW IGK
(Metro Dyestuff)

Leucoester of Vat Golden Yellow GK (Pr 291).

METROSOL GOLDEN YELLOW IRK
(Metro Dyestuff)

Leucoester of Vat Golden Yellow RK (Pr 292).

METROSOL GREEN IBW
METROSOL GREEN IB
(Metro Dyestuff)
Leucoesters of Vat Jade Green (CI 1101).

METROSOL O4B
(Metro Dyestuff)
Leucoester of Brilliant Indigo (CI 1184).

METROSOL OLIVE GREEN IB
(Metro Dyestuff)
Leucoester of Vat Olive Green B (Pr 293).

METROSOL ORANGE HR
(Metro Dyestuff)
Leucoester of Vat Orange R (CI 1217).

METROSOL PINK IR
(Metro Dyestuff)
Leucoester of Vat Brilliant Pink R (Pr 109).

NAPHTOL AS-BB
(General Dyestuff)
A new, straight, nonsubstantive naphthol offered as an especially economical component for saddening shades to be produced with any single nonsubstantive naphthol on cellulosic textiles and especially for deep browns to compete with sulfur colors. It is reported to offer good fastness properties except fastness to chlorine, which is poor to fair.

NAPHTOL AS-AG (PATENTED)
(Progressive)
Produces with Fast Red Salt AL a yellow which is perfectly dischargeable even in full shades.

NAPHTOL AS-KN
(Progressive)
The first Naphtol which is said to produce fast to light khaki shades with a number of fast color salts. Naphtol AS-KN can be dyed continuously on cotton piece-goods for the production of khaki, tan, olive and grey shades. The dyeings are well dischargeable and claimed to be of excellent fastness to washing.

NAPHTOL AS-GP, (PATENTED)
NAPHTOL AS-RP, (PATENTED)
(Progressive)
Two new Naphtols specifically created for polyamide fibers, such as nylon. They exhaust at 160-170° F together with Ofna-perl Salt SBR to produce by a simple aftertreatment with acid a variety of brown, tan, beige, and grey shades said to be of outstanding fastness to washing. The dyeings do not show barré effects on stretch nylon. In blends with Naphtol AS-SG deep, fast black shades can be obtained.

NATIONAL BLUE 2BS SALT
(National)
A stabilized diazonium salt producing, on cotton or viscose rayon, a range of pleasing shades varying from greenish to reddish blue with the various National Naphthols. It is stated that most of these colors exhibit good fastness to light and hot pressing; very good fastness to washing; and excellent fastness to soda boil, acid, alkalis and rubbing. This product may be applied on the continuous padding range, in pressure package dyeing machines, and in open tubs. It is particularly adapted for printing, and is said to possess good shelf storage and excellent printing paste stability. Many of the combinations may also be discharged to very good white with hydrosulfite discharge paste. This product is suitable for the production of sport and work clothes, children's play clothes and materials that are to be rubberized.

NATIONAL CARBANTHRENE DIRECT BLACK 3G DOUBLE PASTE
(National)
An anthraquinone vat dye producing greenish-black shades on cotton and rayon. It may be dyed by the various pigment impregnation methods as well as the reduced bath method, and is also suitable for printing. It is unaffected by the presence of metals in the dyebath and is suitable for use in all types of dyeing equipment. It is said to exhibit maximum fastness to light in heavy shades, the highest AATCC rating, and excellent fastness to most wet processing, including cross dyeing, stoving and perspiration. This product is suitable for the production of resin finished dress goods and suitings, as well as materials that are subsequently to be rubberized.

NATIONAL SOLANTINE BLUE GREEN BFL
(National)
A nondusting, light-fast direct dye producing, on cotton and rayon, a bright bluish-green shade, which may be discharged to an excellent white with neutral and alkaline discharge pastes. It is said to exhibit excellent fastness to light, rubbing, alkalis, dry cleaning, sea water and water; very good fastness to washing and perspiration; and good fastness to acids, mercerizing and hot pressing. This product is suitable for coloring cotton carpet yarns, hosiery, upholstery, suitings, materials to be rubberized; and for dyeing leather.

NEUTRALAN YELLOW GR—NEUTRALAN YELLOW 3R—NEUTRALAN SCARLET G—NEUTRALAN RED GB—NEUTRALAN VIOLET R—NEUTRALAN BLUE GR—NEUTRALAN RUBINE B
(Pharma)
New additions to the neutral-dyeing premetallized color line of Pharma. These types dye wool and nylon from neutral or slightly acid dyebaths. It is stated that they are characterized by their light fastness and that wet properties are excellent. The short application time reduces considerably the cost of processing and preserves the quality of the fabric. These dyes may be applied by the di-ammonium phosphate or ammonium sulfate method.

NEUTROGENE—(VA Series)—Patented
(Francolor)
Insoluble azoic colors which can be developed and fixed on the fiber by a simple steaming method or by hanging. They are claimed to be of very high fastness and can be used in association with Solanile Black, Indocarbon Black, Sulfanol Black, Aniline Black, Naphtazol, direct and vat, and soluble vat colors. These colors may be flash acid aged, neutral aged, or acid aged by the conventional method of aging. Neutrogene colors are available as follows:
LIGHT YELLOW 4J (VA)
YELLOW J EXTRA (VA)
LIGHT GOLDEN YELLOW J (VA)
LIGHT ORANGE JR (VA)
SCARLET R (VA)
LIGHT RED 2J (VA)
RED J (VA)
LIGHT RED STR (VA)
RED R (VA)
BORDEAUX BR (VA)
LIGHT VIOLET R (VA)
VIOLET B (VA)
BLUE (VA)
NAVY BLUE BN (VA)
LIGHT BLUE B (VA)
LIGHT BROWN B (VA)

NOVAGEN BLACK II BN
(Nova)
A fast, acid aging, neutral developing azoic printing black of reddish shade said to have good fastness to all agencies. It produces a full, bloomy black. Novagen Black II BN can be printed alongside pigment colors as it is not appreciably affected by the presence of formaldehyde.

NYALITE FAST BLUE NPC
(Nyanza)
A new addition to the line of Nyalite Fast colors. It produces bright shades of blue on cotton and rayon said to possess outstanding fastness to light. When aftertreated with resin and copper complexes the wash fastness is greatly improved. It is stated that Nyalite Fast Blue NPC withstands the urea formaldehyde treatment; the wash and light fastness are both improved; and acetate fibers are left unstained.

OFNA-RYL* COLORS
(Progressive)
Combinations of Naphtols and bases made for the dyeing of Dacron polyester fiber, and Arnel triacetate fiber. They are dissolved in a special Ofna-ryl Dissolver which acts also as the carrier. Dyeing is carried out at the boil and is to be completed approximately at a pH of 7. Development is carried out with sodium nitrite and mineral acid.

*Registered trade-mark

OIL FAST GREEN PD
(American Aniline)
A new dyestuff manufactured for the coloring of oils and petroleum products. It produces a bright yellowish green which formerly generally required the use of two or more colors.

OIL FAST VIOLET PM
(American Aniline)
A new dyestuff manufactured for the coloring of oils and petroleum products. It produces a reddish violet of high tinctorial value.

ORCO METALLAN BLACK M2B, MG MN
(Organic)
Three neutral dyeing premetallized blacks, each with its distinctive shade, but all claimed to be of equal high fastness, matching the best chrome dyestuffs in all qualities, but especially so in light and perspiration fastness. These colors are recommended by the manufacturers for the dyeing of wool, nylon, and silk in any stage of production, for example raw stock, tops yarn, or piece goods. Being very level dyeing, these colors are said to offer little difficulty in the production of even shades in mixed wools. They can also be used for vigoureaux and direct printing.

ORCO METALLAN BROWN MR, MG
(Organic)
These two dyestuffs are of the neutral-dyeing premetallized type for the dyeing of wool, nylon, and silk in any physical form. They are claimed to offer the extreme in all fastness qualities which are usually only found with chrome dyestuffs. Due to their ease of application and their ability to dye very level shades, these colors are recommended by the manufacturers for all round general use in the dyehouse.

ORCO METALLAN GREY MGN, MB
(Organic)
Two dyestuffs of the neutral-dyeing premetallized type designed for use where the extreme of fastness is required. Their light fastness is said to be on the order of L7 and they are recommended highly by the manufacturers for their level dyeing properties on wool, nylon, and silk in stock, tops yarn or piece goods form.

ORCO NAPHTHOL MM (AS)
(Organic)
Organic's new series of naphthols is headed by Orco Naphthol MM, an azoic which is said to embody a number of superior qualities for the production of brighter, cleaner shades. It is stated that its highly dispersible nature has proven to be a great time saver as well as to guarantee speck free results. This naphthol, with others of the range, can be applied in the usual manner on cotton and rayon. To complete the range, Organic has also available:
ORCO NAPHTHOL MMW (ASSW)
ORCO NAPHTHOL MMBO (ASBO)
ORCO NAPHTHOL MMBS (ASBS)
ORCO NAPHTHOL MMOL (ASOL)
ORCO NAPHTHOL MMRL (ASRL)
ORCO NAPHTHOL MMD (ASD)

ORCOLON BLACK #55 PASTE
(Organic)
A black intended to be used where the extreme of fastness is required on nylon yarn, piece goods and lace. This color, when dyed in conjunction with Orco Developer V11, produces on nylon a bloomy, jet black, which, it is claimed, out-rivals Chrome Black T in fastness to cross dyeing and good fastness to fulling against other white fibers.

ORTOL YELLOW F4G
ORTOL SCARLET FG
ORTOL BLUE FG
ORTOL GREEN B
(Nova-BASF)

The Ortol colors are recommended by the manufacturers for use in combination with the Ortolan range of fast, neutral dyeing dyestuffs for the production of clear brilliant shades on wool, nylon, and wool and nylon mixtures. The dyeing method is the same for the Ortolan colors.

ORTOLAN ® YELLOW RR
ORTOLAN ® BROWN GR
ORTOLAN ® BLUE FR
ORTOLAN ® BLACK G SPECIAL
(Nova-BASF)

The Ortolan Yellow RR, Ortolan Brown GR, an Ortolan Blue FR are three new shades in the range of Ortolan dyestuffs for the dyeing of wool, nylon and silk from a weakly acid bath with short steaming time. They are also recommended by the manufacturers for printing on these fibers. They are said to possess excellent all around fastness properties. Ortolan Black G Special is said to be particularly fast to light and wet processing and is recommended for the dyeing of wool in its various forms and in mixtures with polyamide fibers to produce a union shade.

OXANAL® GOLD L
OZANAL® BRONZE L
(Ciba)

These two dyes yield interesting shades on aluminum when applied by regular anodizing methods.

®Registered trade-mark

PALANTHRENE ® BROWN LG DOUBLE PASTE
(Nova-BASF)

A new homogeneous brown vat dyestuff in highly dispersed form recommended by the manufacturers for piece goods dyeing, pad and jig, and by the pad-steam process, on rayon and cotton. It is said to possess outstanding fastness to light, washing, chlorine and peroxide. It is recommended by the manufacturers particularly for awnings, work clothes and shirtings, straight and in combinations.

PARANOL FAST ORANGE EGL
PARANOL FAST ORANGE ERL
(Nyanza)

These direct oranges are similar to the older types Paranol Fast Orange EG and ER, but leave acetate fibers unstained. They are said to have good light fastness and to be excellent leveling colors for compound shades.

PERMANENT CARMINE FBB EXTRA POWDER (Patented)
(Progressive)

A pigment of a brighter, bluer shade than Permanent Carmine FB extra powder said to possess similar fastness to light but considerably better fastness to bleeding in solvents.

PERMANENT RED FGR EXTRA POWDER (Patented)
(Progressive)

A bright red pigment said to be of excellent fastness to light and covering powder, better than toluidine-red brands.

PERMANENT VIOLET RL EXTRA POWDER AND EXTRA PRESSCAKE
(General Dyestuff)

Powder and presscake forms of a new, straight, carbazole derivative, which is claimed to be characterized by excellent light fastness, exceptionally strong tinctorial value, and complete insolubility in both water and the organic solvents used in pigment work. These products are therefore suggested for use where the ultimate in light fastness and superior chemical resistance are required and products of comparable brilliance with these properties were not previously available.

PERMANENT YELLOW HR EXTRA POWDER (Patented)
(Progressive)

It is claimed that this is the best pigment yellow of its class, fast to bleeding in solvents and of excellent fastness to light. It produces brilliant shades in printing inks, paints, lacquers, enamels, plastics and rubber.

PHARMA ALIZARINE RED S CONC 110% POWDER
(Pharma)

A dark red intended for dyeing wool by conventional chrome methods. Deepest shades are obtained on chrome bottom. The product also gives good shades top-chromed. All wet properties and light fastness are said to be excellent.

PHARMA ALIZARINE SKY BLUE R
(Pharma)

A brilliant, clear, reddish shade of blue for dyeing wool and nylon. A good, general purpose color where brightness and clarity of shade are essential. It is stated that the product has fairly good wet fastness and light fastness.

PHARMA FAST BLACK GC SALT
(Pharma)

A full, rich black at economically low percentages. It is stated that wash and light fastness are excellent and that it is fast to peroxide bleach.

PHARMA FAST RED SALT KL
(Pharma)

A stable salt giving brighter reds and pinks than the common types. The general fastness properties are said to be excellent. It is stated that it has very good light fastness in pale shades and that it is fast to perchlorethylene.

PHARMALAN YELLOW ELG
(Pharma)

A fully premetallized yellow for dyeing wool and nylon in sulfuric acid dyebaths. The product gives good color yields in very light percentages. Excellent light fastness and wet properties are also claimed.

PHARMASOL BLACK CG DOUBLE SOLUTION
(Pharma)

An extremely fast to light jet azoic black, said to be fast to pigment over-prints.

PHARMASOL BLACK GAR CONC SOLUTION
(Pharma)

Said to be a very highly concentrated and economical jet azoic black.

PHARMASOL BLACK JA CONC SOLUTION
(Pharma)

Said to be a very economical bluish jet azoic black.

PHARMASOL BLACK PA DOUBLE SOLUTION
(Pharma)

A fast to light jet azoic black, said to be fast to pigment over-prints.

PHARMASOL BLACK PJ DOUBLE SOLUTION
(Pharma)

Stated to be a fast to light bluish jet azoic black, fast to pigment over-prints.

PHARMASOL BLUE GFC SOLUTION
(Pharma)

A bright fast coupling azoic blue for use in conventional and short speed acid aging.

PHARMASOL BROWN PKB SOLUTION
(Pharma)

A yellow brown azoic yielding light fast browns which can be shaded with azoic blues to yield a full range of browns said to possess good all-around fastness.

PHARMASOL RED GFC SOLUTION
(Pharma)

A bright fast coupling azoic red for use in conventional and short speed acid aging.

PHARMASOL RED GNBB DOUBLE SOLUTION
(Pharma)

An extremely bright bluish azoic red said to be of very good fastness to light washing in chlorine.

PHARMASOL SCARLET SFC SOLUTION
(Pharma)

A bright fast coupling azoic scarlet for use in conventional and short speed acid aging.

PHARMASOL YELLOW GFC SOLUTION
(Pharma)

A bright fast coupling azoic yellow for use in conventional and short speed acid aging.

"PONSOL"® DIRECT BLACK PC DOUBLE PASTE
(Du Pont)

An anthraquinone-type vat dye, which produces deep, rich shades of black on either cotton or rayon after oxidation with sodium perborate or sodium bichromate and acetic acid. The product is particularly recommended by the manufacturers for package dyeing and for pigment application to piece goods by pad-jig or by the Du Pont Pad-Steam Continuous Dyeing Process. "Ponsol" Direct Black PC Double Paste is said to be especially useful where good fastness to peroxide bleaching, washing and chlorine are required.

*Registered trade-mark

"PONSOL"® GRAY N DOUBLE PASTE
(Du Pont)

An anthraquinone vat dye that produces bluish-gray to black shades on cotton and rayon. It is stated that it is of particular interest for making medium gray to charcoal gray shades for dress goods, shirtings, industrial uniform materials or other uses requiring good fastness to light, chlorine, washing and other color-destroying influences. This dye becomes somewhat duller under yellow incandescent light but remains on tone and is claimed to be superior in this respect to other vat dyes currently in use for producing similar shades. "Ponsol" Gray N Double Paste is especially recommended by the manufacturers for dyeing piece goods by pad-jig techniques or the Du Pont Pad-Steam Continuous Dyeing Process. It can also be applied satisfactorily in heavy shades (above 5.0%) to yarn in package machines by pigmenting followed by reduction and dyeing at 140° to 160° F.

*Registered trade-mark

"PONTAMINE"® FAST BLUE ML
(Du Pont)

A fast-to-light direct dye, which is said to be particularly suited to the production of shades on cotton and rayon that show good resistance to the effects of resin treatments. It is stated that light to medium gray shades with good lightfastness that show only negligible staining of nylon effects can be produced with this new blue shaded with other resin-fast direct dyes. Because of its good build-up properties it is suitable for the production of charcoal gray and navy shades. Concentrations above 1.0% are not recommended in these heavy shades, particularly where nylon reserve is of paramount importance.

*Registered trade-mark

"PONTAMINE"® WHITE BTS CONC
(Du Pont)

A water-soluble fluorescent textile whitening agent, especially recommended by the manufacturers for application to cotton and rayon in the form of yarns, knit goods and woven fabrics. It exhibits a strong greenish-blue fluorescence and is said to have very good fastness to washing, discharge printing, peroxide bleaching, and to have lightfastness equal to that of other whitening agents. The product can be applied at any temperature, although its greatest tinctorial effectiveness is in the temperature range of 130° to 200°F.

*Registered trade-mark

PROCION YELLOW R
PROCION BRILLIANT RED 2B
PROCION BLUE 3G
(Arnold, Hoffman)

These are the first three members of a new range of dyestuffs which are described as being fixed to cellulosic fiber by direct chemical linkage rather than by aggregation or physical association with the fiber. They are characterized by their mutual compatibility, high aqueous solubility, and low physical affinity for cellulosic fibers. The Procions are said to be highly suitable for continuous dyeing as well as batch dyeing procedures. They are recommended by the manufacturers for the production of fast, brilliant shades by dyeing on cellulosic fabrics and nylon, and by printing on cellulosic fabrics.

PV—FAST RED B (Patented)
(Progressive)

This new pigment is the only organic red which, it is claimed, shows the same high fastness properties as cadmium reds. It is stated that the fastness to light is 6-7 even in pastel shades made in polyvinylchloride with 0.5% titanium dioxide and 0.005% PV-Fast Red B. The product does not bleed in solvents, is not affected by plasticizers and does not change its shade at 550°F. The new product is, therefore, suitable for the coloring of plastics.

PYRAZOL FAST BRILLIANT RED RA Pat
(Sandoz)

For cotton and viscose, this dye exhibits an improved and satisfactory drawing rate. Shade is yellower and brighter than Pyrazol Fast Red 6BL. Shade change when resin treated is negligible.

PYRAZOLINE FAST YELLOW EFL
(Pharma)

A substantive reddish yellow for cotton and viscose rayon. It is claimed that it has maximum light fastness for a direct color. Fade-Ometer rating is L7 for rayon and L6-L7 for cotton. Acetate, nylon, silk and wool reserves are left white. All wet fastness properties are said to be excellent. Resistance to plissé is said to be excellent. The product may be used with urea formaldehyde and melamine resins with excellent results. This product is completely nondischargeable.

PYRAZOLINE TURQUOISE LGA
(Pharma)

A clear, bright, substantive turquoise shade for cotton and viscose, dyed and printed. The product is said to have good light and wet fastness. When aftertreated with resins, the shade is not altered and the light fastness is not lowered.

RAPIDOGEN* BLACK I
(General Dyestuff)

This stabilized combination is said to be a new, especially strong and economical product, which is claimed to print rich jet azoic blacks of good fastness properties on table linen or on washable cotton or rayon dress goods that are to receive a resin finish or plissé overprint.

*Registered trade-mark

RONAGEN BLACK IL POWDER
(Nova-Rohner)

A new azoic printing color which is said to possess excellent fastness to light, chlorine, peroxide and formaldehyde on cotton and rayon and does not bleed out and stain whites. It is applied by the normal procedure for azoic colors and produces greys, as well as blacks, said to be of very good light fastness.

SANDOTHRENE BLUE NGCDN DOUBLE PASTE ULTRASPERSE (C I 1112)
(Sandoz)

This vat dye is nontenderizing. Suitable for vat printing in light shades. For cotton and viscose.

SANDOTHRENE BRILLIANT ORANGE NRK PASTE ULTRASPERSE (Pr 116)
(Sandoz)

Vat dyes bright oranges said to be of very good fastness to light, even in pale shades. Recommended by the manufacturers for casements, furnishings, awnings and goods to be laundered. Nontendering when exposed to light; very level dyeing. Yields true peach shade in light to medium dyeings. Available for vat printing.

SANDOTHRENE DARK BLUE NRG DOUBLE PASTE ULTRASPERSE (C I 1100)
(Sandoz)

Fastness of this vat color in full shades is said to be good. Gives satisfactory vat printing results in light and heavy shades.

SANDOTHRENE OLIVE NT3R PASTE ULTRASPERSE (Pr 547)
(Sandoz)

Has all the good properties of the Olive NT type and is much redder in shade.

SANDOTHRENE RED BROWN N2RF PASTE ULTRASPERSE
(Sandoz)

A level dyeing red brown vat dye which builds up and exhausts well. This color also is said to combine excellent all-around fastness and good money value. It is stated that it shows outstanding fastness to peroxide bleaching.

SANDOTHRENE RED NF2B DOUBLE PASTE ULTRASPERSE (Pr 296)
(Sandoz)

Popular for shading purposes, this vat red is said to afford excellent all-around color fastness. It is stated that it is suitable for curtain and furnishing materials and goods that must be fast to washing, boiling and color bleeding. Covers dead cotton satisfactorily and uneven rayon at color value if differences in affinity are not too great. Gives white discharge on cotton only. Suitable for vat printing when used with special formulations.

SANDOTHRENE YELLOW NP2GA DOUBLE PASTE ULTRASPERSE
(Sandoz)

A good base for gold and orange shades, especially when light fastness is required. Used extensively for clothing, draperies and toweling. Satisfactory for printing by flash aging method.

"SEVRON"* BRILLIANT RED B
(Du Pont)

A bright bluish-red suitable as a self-shade and in combination with other "Sevron" dyes to produce a wide range of shades that are said to possess good light and wetfastness properties. Has only little affinity for nylon and moderate affinity for acetate and silk.

*Registered trade-mark

"SEVRON"* ORANGE G
(Du Pont)

Produces bright, yellow-orange shades that are said to possess very good fastness to light and wet processing. This product has good affinity for nylon, acetate and silk but is inferior in fastness properties to the dyes normally applied to these fibers.

*Registered trade-mark

SOLANILE BLACK—Patented
(Francolor)

A diphenylamine derivative, water-soluble dyestuff for printing on all cellulosic fiber, cotton, filament or staple fiber viscose, acetate rayon, as well as on wool, union, natural silk. This dyestuff produces a dense oxidation black which is ungreenable even without bichromate treatment, and is said to possess excellent fastness to light and washing. Neutral or acid steaming or even hanging is enough to develop the black on the fiber. Solanile Black may be printed in association with numerous types of dyestuff so that it is said to be of great interest for goods which require good all-around fastness. This dyestuff is also suitable for pad dyeing on cotton, viscose, other cellulosic fibers and natural silk; by a simple steaming process, a black ground is obtained which is adaptable for white and colored resists. It is possible to apply in combination Solanile Black with Neutrogenes, Napthazogenes, Solanthrenes and Solasols. It is claimed to have definite advantages over diphenyl black and aniline black. When compared with diphenyl black and aniline black it is claimed to show perfect stability of the print paste, excellent stability of the color to overheating, possibility of finishing several hours after printing with no tendering of the fiber. The manufacturer claims it is much cheaper (6% prints) to use than regular vat black.

SOLANILE BROWN J—Patented
(Francolor)

Soluble oxidation color for printing on cellulosic fiber and also wool and silk. This dyestuff is applied by the same "steaming method" as Solanile Black. It produces dark brown shades said to be of very good all-around fastness and may be printed with numerous other types of dyestuffs.

SOLANTHRENE BRILLIANT GREEN 3J EXTRA CONC POWDER FINE
(Francolor)

A new member of the Solanthrene Brilliant Green series. It produces yellow green shades claimed to be of outstanding brightness and good wet and light fastness. This dyes at 140°F and is used for vat dyeing on cotton and viscose.

SOLANTHRENE BRILLIANT GREEN JN SUPERFINE PASTE
(Francolor)

Another of the Solanthrene Brilliant Greens. This color is dyed on cotton and viscose by all pigmentation methods. It is claimed to be particularly fast to all wet treatment and to have also excellent light fastness. It dyes and reduces at 140° F.

SOLANTHRENE DEEP BROWN B—OPTIMA PASTE
(Francolor)

Another new Optima Paste for printing on cotton and cellulosic fibers as well as machine prints on acetate. Yields good deep shades with only moderate concentration of dyestuff. Is claimed to have excellent fastness to light and washing.

SOLANTHRENE PRINTING BLACK 2J—DOUBLE PASTE
(Francolor)

An addition to the Solanthrene Printing colors. It is a good economical deep black used for printing on cotton and other vegetable fibers. It may also be used on acetate in machine prints. This color is said to possess good fastness to light and washing.

SOLANTHRENE PRINTING BLACK TL OPTIMA PASTE
(Francolor)

A new vat black for cotton and viscose claimed to possess excellent all-around fastness. It produces good shades of black when printed by normal methods on cotton. It may also be printed by machine on acetate.

SOLANTHRENE SUPERFINE PASTE COLORS
(Francolor)

This is a new form of fairly viscous aqueous paste which, it is stated, does not dry out on exposure, does not settle out on storing and is unaffected by freezing at 20 o/c. They are easily pasted with water at 105-120°F. These Superfine Pastes have been added to this line after extensive research and are characterized by increased particle fineness, speed and ease of reduction. These pastes are recommended by the manufacturers for pigment padding and are said to have the considerable advantage of being applicable by pigment padding to grey cotton piece goods giving good penetration and perfect levelling. Padding is carried out at temperature of 75-85°F. These colors are said to be very stable to all wetting out agents. The following Solanthrene dyes are now available in Superfine Paste form:

DARK BLUE BA (CI 1099)
NAVY BLUE R (CI 1100)
BLUE SB (CI 1113)
BRILLIANT VIOLET 2R (CI 1104)
BROWN R (CI 1151)
BROWN BR (CI 1149)
BROWN J (CI 1152)
OLIVE R (CI 1150)
BRILLIANT GREEN B ((CI 1101)
BRILLIANT GREEN 2F (CI 1101)
OLIVE T (Pr 547)
GREY BJ
GREY BL
HELIANE YELLOW J (Pr 9)

SOLANTHRENE YELLOW 3J (C I 1132) SUPERFINE PASTE
(Francolor)

This is another in the line of superfine pastes for dyeing of cotton and viscose by all pigmentation processes. It dyes at 105° F and is said to have very good general fastness to light and washing. This is considerably greener and brighter than Solanthrene Yellow 2J.

SOLAR* COATING BLUE RM
(General Dyestuff)

A water-dispersible phosphotungstomolybdate toner of basic dyes especially compounded and standardized for tinting paper coatings applicable on the machine or in conversion brush coating. It is said to be useful in either synthetic-latex or starch formulations and in casein-bound coatings that are less alkaline than pH 9.0. Its superior dispersibility seriously impairs its color strength in beater dyeing, however, for which good retention is necessary.

*Registered trade-mark

SOLASOL COLORS
(Francolor)

Solasol colors are the soluble esters of leuco derivatives of vat colors. They have the advantage of being water soluble and to have a certain affinity for cellulosic fibers. This affinity together with their high price limits their use to pastel shades. It is stated that they are very level dyeing and possess the high fastness of the vat colors from which they are derived. They are in powder form and are satisfactorily stable. Solasols are dyed on cotton in a jig, pad or beck. The following is the present Solasol range:
BRILLIANT YELLOW JS (Pr 291)
BRILLIANT YELLOW RS (Pr 292)
ORANGE RH (CI 1227)
BRILLIANT PINK RS (Pr 109)
RED VIOLET NS (Pr 503)
BRILLIANT VIOLET 4RS (CI 1104)
BLUE SBS (CI 1113)
INDIGO 4B (CI 1178)
INDIGO N EXTRA (CI 1184)
BRILLIANT GREEN BS (CI 1101)
DARK GREEN JS EXTRA (Pr 293)
BROWN BRS (Pr 118)
BROWN 2RS (Pr 121)
GREY BLS (Pr 295)

SOLOPHENYL* BLUE 5GL
(Geigy)

A neutral shade of blue with medium brightness capable of producing shades with good light and fair wash fastness on cellulosic fibers so states the manufacturer. It is remarked that the color: is only slightly affected in shade and light fastness by TBL and other crease proof finishes; is well adapted for use with Gycofix 67 and other coppered resin aftertreating compounds to improve wash and perspiration fastness; reserves nylon remarkably well; possesses good tinctorial strength and buildup making it possible to produce heavy blues at relatively low cost; draws slowly but exhausts and levels well when applied with moderate amounts of salt.

SOLOPHENYL* TURQUOISE BLUE GRL 250%
(Geigy)

A new color said to produce noticeably redder and brighter shades than the older brand of Solophenyl Turquoise Blue GL. It can be dyed as a direct color on cellulosic fibers and in an acid bath also has good affinity for wool, nylon and silk. The manufacturer recommends it wherever clear, brilliant shades of blue or green of good wet and light fastness are required.

*Registered trade-mark

SUPRALAN* BLUE NB-CF
(General Dyestuff)

A straight neutral-dyeing premetalized dyestuff for dyeing very fast shades on wool by a time-saving method, which is claimed to preserve the hand of the wool. It is said to be used also for printing and for dyeing and printing fast blues on nylon, silk, and Acrilan acrylic fiber.

*Registered trade-mark

TINON* CHLORINE BLUE GCDN PASTE
(Geigy)

One of the most popular of all vat colors this product yields a reddish blue shade and is expected to find extensive use in dyeing fast to washing shades on piece goods for raincoating, draperies and goods exposed to weather and for yarns which will not be subsequently chlorine bleached. This product is reported to have good tinctorial value and excellent dispersion.

*Registered trade-mark

TINON* CHLORINE BRILLIANT ORANGE RK PASTE
(Geigy)

A bright reddish vat orange recommended by the manufacturer for use both as a self shade and in combinations, for dyeing bright orange and rose shades on house-ware goods particularly towelling and sheetings. It is reported that this new dyestuff is one of the few vat oranges which does not cause premature tendering of cellulose. This product is said to have high temperature stability and to be suitable for continuous application methods.

*Registered trade-mark

TINON* CHLORINE NAVY BLUE GRA DOUBLE PASTE
(Geigy)

A greenish shade of navy, this new vat dye should prove of exceptional interest in pigment padding applications where its reportedly excellent dispersion is said to yield extremely level and well-penetrated results. It is said to have good all around fastness, and is reported 6-7 to light in heavy depths, and 4-5 to chlorine bleaching. Application can be made by routine as well as continuous methods.

*Registered trade-mark

TINON* CHLORINE RED F2B DOUBLE PASTE
(Geigy)

This product is reported to be one of the brightest vat reds available. It is expected to find wide application as a self shade and in combination with vat oranges of the 2R and 3G types for dyeing draperies, awnings, upholstery and rain wear. Is suitable for all conventional and continuous applications. It is also said that this is one of the few vat red shades that does not exhibit a considerable shade change in the final soaping operation after dyeing.

*Registered trade-mark

TINON* CHLORINE RED BROWN 2RF PASTE
(Geigy)

A reddish vat brown of exceptionally good build-up, it is believed that this product will prove of interest in dyeing heavy brown shades where its reported excellent dyeing properties and economy should prove of considerable value. This product has the characteristic good over all fastness of vat colors and is reported as being excellent to light. It reportedly has good dispersion, a medium exhaust rate and excellent levelling properties.

*Registered trade-mark

TINON* CHLORINE VIOLET B4R DOUBLE PASTE
(Geigy)

A reddish vat violet of good overall fastness, it is expected that this product will find considerable usage on yarns and colored woven goods where fastness to hot pressing and water spotting is not a requirement. While a hot dyeing type, this product is reportedly suitable for pigment package and continuous applications because of its excellent dispersion. This product is not suitable for printing but a separate type, Tinon Chlorine Violet B4RP Double Paste is available for printing.

*Registered trade-mark

TINON* CHLORINE VIOLET FFBN PASTE
(Geigy)

A new reddish vat violet which because of its clean bright shade is expected to find considerable use on cotton dress and wash fast fabrics. It is stated that unlike most vat violets which are characterized by a rapid exhaust, this new product has a medium exhaust rate and is considered to be a level dyeing color. It is suitable for package and skein dyeing by conventional methods and for high temperature procedures. It is also reported to be somewhat less sensitive to hot pressing and water spotting than most other violets and has moderate resistance to prolonged severe laundering.

*Registered trade-mark

TINON* CHLORINE YELLOW P2GA DOUBLE PASTE
(Geigy)

It is reported that this new dyestuff produces greener, brighter shades of yellow possessing noticeably better light fastness than the well known vat Flavone GC which has long been a standby color in the vat color range. The new color is further said to level well and to achieve good penetration. Application can be made by all standard techniques and with good leuco stability it is well adapted for continuous dyeing operations.

*Registered trade-mark

VAT BRILLIANT GREEN H3G POWDER FINE FOR DYEING (Patented)
(Progressive)

In light shades this product produces a fastness to light that, it is claimed, cannot be matched. Very good fastness to washing, chlorine and peroxide are also claimed. Suitable for pigment padding and pigment dyeing. Dyeings are dischargeable to white. It is stated that the shade does not change in crease-resistant finishing nor is the fastness to light impaired.

VIALON ® FAST BLUE FFG
VIALON ® FAST VIOLET RR
(Nova-BASF)

These are additions to the range of Vialon Fast metallized dyestuffs for the dyeing of polyamide (nylon, Perlon, etc.) fibers from a neutral bath with ammonium sulfate. Vialon Fast Blue FFG is a new, homogeneous, extremely level dyeing color said to possess excellent all around fastness and to yield a very attractive brilliant blue shade. It is also recommended for printing. Vialon Fast Violet RR is characterized by its pleasing shade and is said to have very good all around fastness properties, including excellent fastness to light.

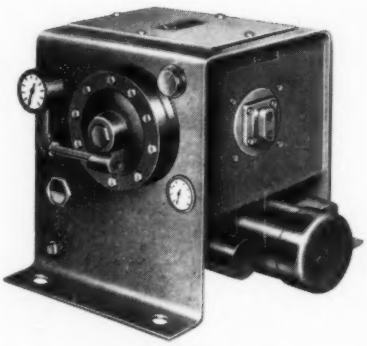
VITROLAN NAVY BLUE 2RF (Pr 322)
(Sandoz)

Similar to Vitrolan Navy Blue RNF, but redder in shade.

VITROLAN NAVY BLUE RNF (Pr 319)
(Sandoz)

Metallized dye for wool and nylon, said to combine level dyeing with good fastness to light, washing, perspiration and mild milling. Like other Vitrolan colors, it is most suitable for dyeing carbonized materials. This color is said to afford highest rating in wash tests at 105 and 140 degrees Fahrenheit, and to peroxide bleaching. Fastness on wool, medium shade, daylight 5-6; Fade-Ometer, 5.

EQUIPMENT



Model 550 Edge Guide

MODEL 550 EDGE GUIDE
(Askania)

This new, improved edge guide unit is now available for light-duty service in the textile, plastics, rubber and paper converting fields.

A space saver, the new model is more compact than the one formerly available for this service. The low-cost unit comprises a self-contained regulator, motor, pump and oil supply, which makes it easier to install.

SEWING MACHINE FOR TUFTED CARPET
(Birch)

For sewing the ends of tufted carpet together for continuous processing, this 20-foot railway sewing machine is fitted with a special chain stitch sewing head.

The machine is said to be of exceptionally rugged construction and is designed to replace machines previously used for this operation which are not sufficiently sturdy for work on this heavy fabric.

CONTINUOUS OPEN-WIDTH TUFTED CARPET DYEING MACHINE
(Birch)

This machine is of stainless-steel construction with two pairs of rubber squeeze rolls, the first to insure penetration and the second to remove the excess dye liquor. It is made in widths up to 20 feet.

Formerly most tufted carpet was dyed in open-width dye kettles, but recently there has been a demand for continuous open-width dyeing to speed up the production and to insure uniform dyeing.

LABORATORY PADDING MACHINE
(Birch)

This machine is a redesigned version of a machine produced last year. It is of more rugged construction and is built with an integral variable speed drive with pressure applied to the nip rolls by air cylinders. This pressure may be varied as desired. The machine is available either with two rubber rolls or with one neoprene roll and one stainless-steel roll.

The results obtained are said to be comparable to those achieved on a 15-ton full size machine.

SCUTCHER (ALL STAINLESS STEEL)
(Birch)

This machine, shown at the recent Southern Textile Machinery Exposition, is designed so that it may be produced at a reasonable price.

Side frames are of stainless steel.

Where it is desired, Birch Brothers, Inc, has fitted its scutchers with air guiders in place of the swinging governor previously used. It is claimed that the cloth is guided more accurately.

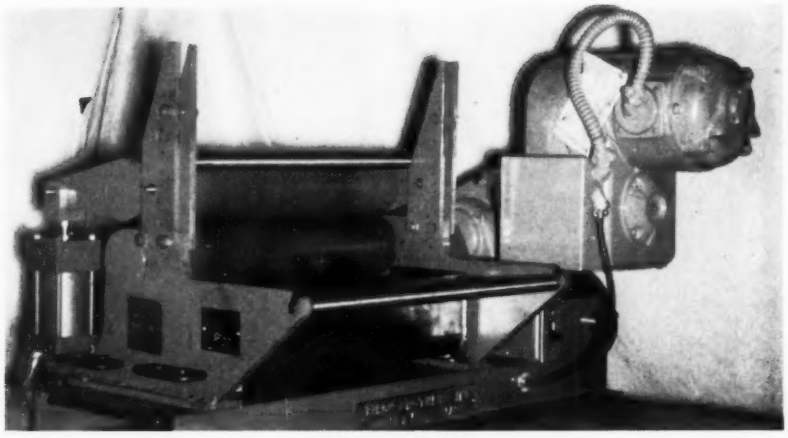
SEAM INSPECTING, SEWING AND WINDING MACHINE
(Birch)

This unit is designed for use with large diameter rolls of cloth, as received from the gray mill and delivered to the finishing plant. It is said to permit the rapid inspection (130 to 260 yds per minute) of seams to ascertain if they need resewing before processing.

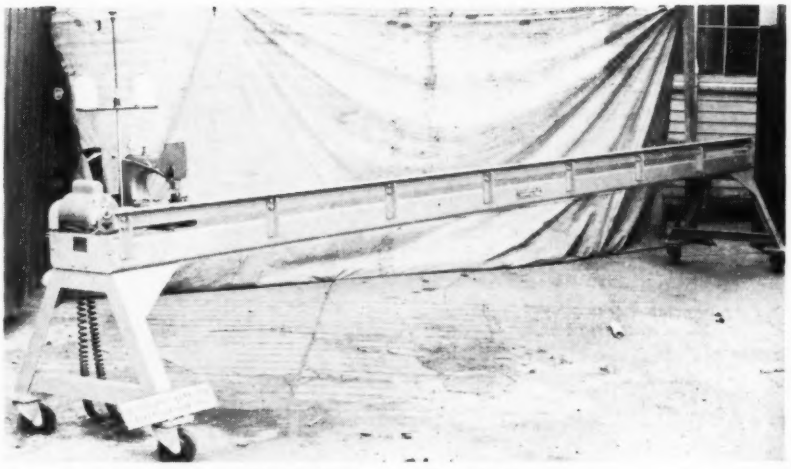
The machine consists of a let-off unit equipped with magnetic brakes, and is followed by a pair of upright stands on which the guide rolls, the automatic seam detector, the aircushioned compensating roll, and the control panel are mounted. The seam detector is said to be sufficiently sensitive so that the seam is automatically stopped just before it reaches the railway sewing machine, which is also mounted on the uprights. This quick stopping is accomplished by means of magnetic brakes.

Drive is of the variable speed motor type.

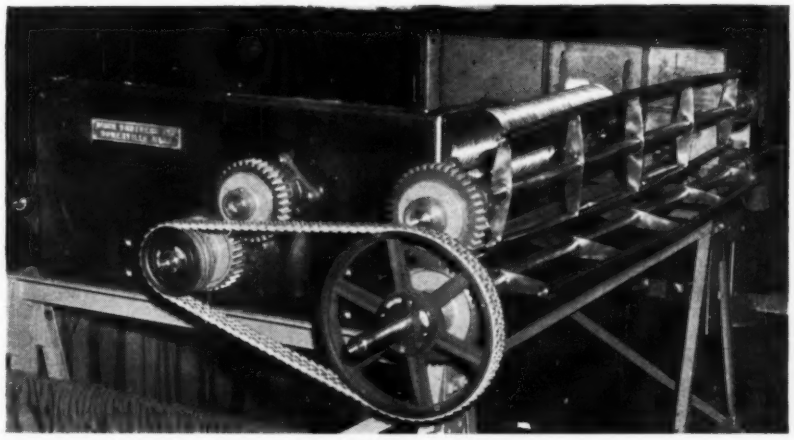
The machine reportedly eliminates the possibility of poor seams and consequent breakage of the seams with expensive delays, as well as permitting the detection of crooked seams which might cause wrinkles or distortion of the fabric in the finishing operations.



Laboratory Padder



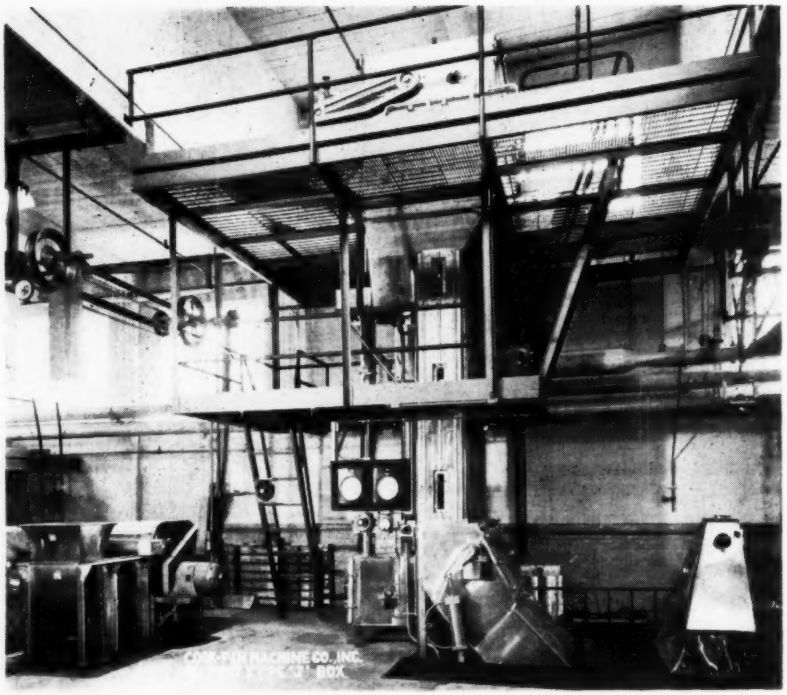
Sewing Machine for Tufted Carpet



Stainless-steel Scutcher

Above: Continuous Dyeing Range

Right: Improved J Box



DYEING RANGE FOR CONTINUOUS PAD-STEAM DYEING OF CORDUROYS AND VELVETEENS

(Cook-P & N)

This features high-speed dyeing using vat, naphthol, sulfur and acid dyes. Range includes 2 padders; patented stainless-steel steamer having automatic cloth tension control; 8-unit all-stainless-steel neutralizing, soaping and washing section; stainless-steel dry cans having V-belt drives; and folder.

Special arrangement of the dry cans provides flexibility of operation not previously possible in dyeing ranges, it is claimed. It is further claimed that top quality at greatly reduced costs has proven the value of this new equipment to the mill.

This equipment is also adaptable for dyeing other fabrics, such as twills, drills, broadcloths, flannels, etc, of cotton, synthetic or blends.

OPEN-WIDTH CONTINUOUS BLEACH RANGE

(Cook-P & N)

Cotton twills, drills, ducks, print cloths and broadcloths are among the wide variety of fabrics reported to have been successfully processed through this equipment since its installation at Dominion Textile Co of Canada was completed several months ago. This equipment is said to combine into one continuous process operations previously done in 4 separate costly steps. Top quality bleaching at lower material and labor costs to Dominion have resulted from this installation. it is claimed. Speeds are up to 150 yards per minute.

Range has singer; continuous desizing saturation, steaming and washing section; acid saturation, timing and washing section; full mercerizing section; caustic bleaching section; peroxide bleaching section and dry cans.

Among the outstanding machine features cited by the manufacturers are: a) patented continuous desize steamer with automatic cloth tension control; b) new design saturators for desize, acid, caustic and peroxide wherein the solution concentrations are automatically maintained and kept uniform and clean; c) new all-stainless design for desize, acid and caustic washers including unique principle of counterflow for the wash water; and d) new principle for removal of caustic from mercerized cloth resulting in the goods leaving the mercerizer section wider than before possible. Extra width at this point is said to be of extreme importance since it results in wider finished goods.

IMPROVED J BOX

(Cook-P & N)

Cook-P & N Machine Company has introduced two improvements to its J boxes used for storage-in-process following desize, acid and bleaching operations in continuous rope and open-width ranges.

One of the new features is a patented gate used in the initial loading of the goods into the J box. This is said to eliminate tangling of cloth and to permit it to be freely pulled out of the delivery end of the J. This feature is also credited with eliminating costly seconds, down-time, and reprocessing of many thousands of yards of cloth.

The second feature is a patent-applied-for change in the design of the exit section to eliminate "snatch" due to tightly packed cloth in the J. It is said to allow the tightly packed mass of cloth to open up with the result that the cloth may be pulled out of the J box freely and without tension. Also allows cloth to travel up the reverse curve to a greater extent and come closer to the exit of the J box.

CHAINLESS MERCERIZING EQUIPMENT

(Cook-P & N)

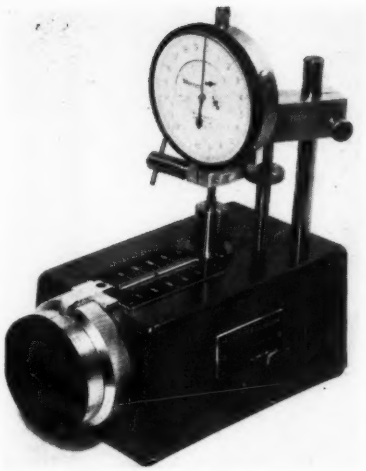
Improvements in method of saturating the goods with caustic, chainless stretching and caustic removal are being incorporated into this new range.

ROTO-BLEACH

(Cook-P & N)

This is a new open-width timing steamer for storage of cloth in continuous bleaching ranges following the acid, caustic and peroxide saturators. The manufacturer believes it will broaden the use of open-width bleaching equipment.

The Roto-Bleach, which replaces the conveyor-type timing steamer, is said to be much less costly to build, occupies only about ¼th the floor space, eliminates tangles, and is adaptable to rope storage as well as open width.



Dial Indicator Calibrator

DIAL INDICATOR CALIBRATOR
(Custom Scientific)

This instrument is used for checking and calibrating the accuracy of dial indicators. In operation, the principle involved is a plunger driven by a hardened wedge and a precision screw. The screw is operated by two dials. The outboard dial, for fine control, is graduated in .000025 inches. The inboard dial, for rapid travel, is knurled and drives the screw through a set of planetary gears. The range is 0 to ½ inch travel of CW or CCW indicators. The housing is a stress-relieved casting and all internal parts are hardened steel. An adjustable split take-up nut on the screw is used to compensate for wear. (Pat appld for).

AUTOMATIC ALUNDUM GUARDED HOT PLATE CONSOLE
(Custom Scientific)

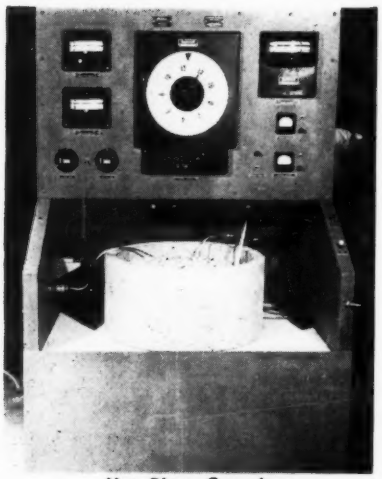
Manufactured jointly by Parameters Inc and Custom Scientific Instruments, Inc, this is an automatic system for determining accurately the coefficients of thermal conductivity of various materials. Specifications are: 1) hot plate control and guard heater temperature ranges available between 100° F and 1400° F limits; 2) cooling plate temperature ranges available between 60° F and 600° F limits; 3) coefficients of thermal conductivity determinable up to 5.0 BTU/sq ft hr °F/in; 4) temperatures of hot surface and cold surface obtained and maintained automatically within 1%. Alundum hot plates Model CS-76 may be purchased separate from console.—(ASTM Designation: C177-45)

SMT TENSIOMETER
(Custom Scientific)

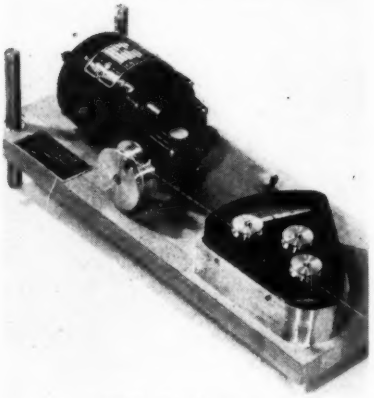
Developed by Coats & Clark Research Department of Newark, NJ, this unit was designed to measure thread tensions on sewing machines. The thread is drawn through the three pulleys of the tensiometer by means of an electrical motor. The take-off point of the thread from the sewing machine is after the thread guide above the needle. Tension measurements are desired when breakage occurs in sewing. This unit affords simple and easy means of measuring the tension. Other possible uses for the tensiometer are the effect of finishes, twist softeners, lubricants on thread and of natural and synthetic threads on a sewing machine under constant conditions through tension measurements. The SMT Tensiometer is available in different ranges up to 2000 grams.

ELECTROSTATIC VOLTMETER
(Custom Scientific)

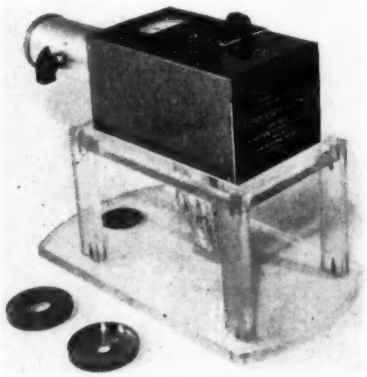
This unit, developed by the Institute of Textile Technology, was designed to detect and measure electrostatic charges generated on textile materials during processing. It is portable and may be aimed like a gun. It is extremely sensitive, with provisions made to permit reduction of sensitivity to one tenth or one hundredth. Therefore, the Electrostatic Voltmeter provides an indication of the amount of electrical charge on moving or stationary equipment or materials. The unit is not limited to textiles but is designed for use in any industry where electrostatic charges present a problem.



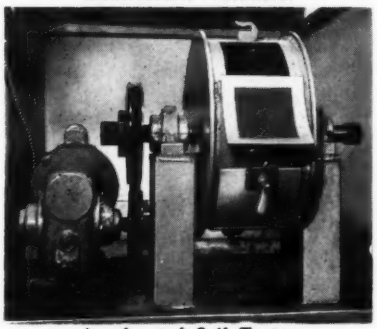
Hot Plate Console



SMT Tensiometer



Electrostatic Voltmeter



Accelerated Soil Tester

ACCELERATED SOIL TESTER
(Custom Scientific)

Developed by the textile resin department of the American Cyanamid Company, this unit provides a method of soiling the specimens for the evaluation of soil-retardant finishes on carpeting and fabrics. The ball mill soiling apparatus rotates at 60 rpm with direction of rotation reversing every 2 minutes. The soil is distributed by placing a weighted amount in a perforated steel capsule along with steel balls. As the ball mill rotates, the soil is uniformly deposited on the fabric samples. The ball mill is equipped to hold 4 samples of carpeting or fabric, each sample size 5" x 5". After the samples have been soiled, they are removed, vacuumed, and the soiling is determined by the reflectance meter. Tests with the soil tester have been correlated with actual floor tests by Cyanamid's textile resin department.

PARIS SWEATER FINISHER
(Garment Finishing)

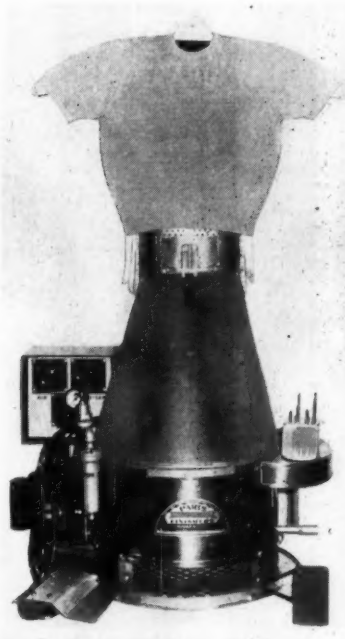
Sweaters can be automatically pressed to exact size, it is claimed, with this new steam-air press for knitted outerwear, which has been under development and pilot-plant testing since the first showing of the prototype unit at the 1955 Knitting Arts Exhibition.

This machine shapes and presses all knitted fabrics, whether full fashioned or cut and sewn. Individual steam and drying cycles are used for natural fibers, synthetics and blends. Its automatic action handles both pullovers and cardigans with either short or long sleeves.

The Paris Finisher handles the full range of sizes with a single manual setting. The machine's moving parts are said to automatically and instantaneously expand to the correct dimensions of each manufacturer's own range.

The garment is moistened and dried by a novel balanced control of steam and air. Undisturbed by any unevenness of pressure, the hand of all knitted fabrics is said to be enhanced. Variations in size are precluded by the Paris Finisher's automatic and precise action, it is claimed.

Aside from placing the garment on, and removing it from the machine, every step of the operation is automatic.



Paris Sweater Finisher

It is claimed that an unskilled person can learn to operate the Paris in a matter of minutes and quickly attain a production rate which greatly exceeds any that is possible with conventional pressing.

The Paris is manually set to a given sweater size. The garment is placed over the machine's moving members, which expand by compressed air action to the exact positions that produce all the critical measurements of the given size. Steam (from a generator or high-pressure boiler) is applied uniformly to the garment except at the neck and waist ribbon, where it is diminished or withheld. Heated air from an electrically driven fan in the machine base dries the garment and sets the finish. This steaming and drying cycle ranges from a total of 12 to 30 seconds depending on the fabric. When ended, the sweater is completely pressed and ready for folding and packing.

PNEUMATIC AND ELECTRIC CUT-CAM PROGRAM RECORDING CONTROLLERS
(Gotham)

Designed for the control of process pressure or temperature to provide duplication of processing cycles in accordance with a predetermined time schedule.

Adherence to the schedule is maintained by use of a transparent plastic cam, printed exactly like the chart, mounted on the same hub, and revolving at the same speed. The desired program is cut into the cam, and a cam follower, rolling along the outside edge of the cam, automatically changes the control point of the controller. Rate of rise is subject only to the physical limitations of the follower in following the slope cut into the cam. At the end of the process cycle the control action automatically stops. An exclusive feature is an all-pneumatic automatic shut-off available on proportional controllers for use when no electric power is available.

SPACEMASTER MODEL JFTT 2.5 ELECTRIC LIFT TRUCK
(Lewis-Shepard)

This 2500-lb capacity lift truck has been designed for extreme heavy duty operation, and is said to be especially efficient when the operation involves constant stopping and starting.

The traction speed is 4.5 mph with a full load and 5.0 mph empty with three speeds forward and reverse, plus timed acceleration. The result is said to be an extremely smooth operation. The truck has a lift speed of 25 fpm loaded and an operating weight of 4300 lbs.

This new model is reported to be especially adaptable for working in and out of trailer trucks and elevators and can stack in aisles only 110¾" wide. A new higher voltage allows more work capacity and keeps maintenance at a minimum, it is claimed.

LQ600-200 BRONZE GLOBE VALVE
(Lunkenheimer)

This new valve, rated at 200 pounds steam pressure and at 400 pounds water, oil and gas pressure, supplies the need for a higher pressure throttling globe valve. It features body and bonnet of Lunkenheimer S-1 bronze and Brinalloy* seats and discs hardened all the way through, reportedly making them more resistant to wear and corrosion than 500 Brinnell stainless steel and far exceeding the wear resistance of 1000 Brinell case-hardened stainless steel. The seats and discs are said to be lapped for a micro-optically smooth, flat, leak-proof seal that does not need regrinding or replacement.

Available in ¼- to 2-inch sizes; also in 150-lb pressure class.

*Registered trade-mark

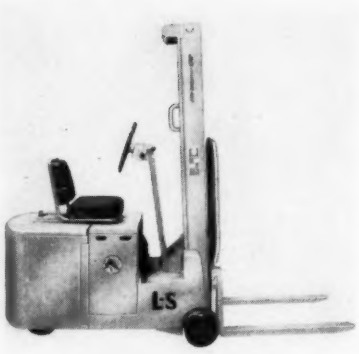
2-STAGE COLLOID MILL
(Manton-Gaulin)

This new unit features a special RE (pat appl for) design, incorporating removable rotor, stator and rotary shaft seal. This is said to simplify operating, speed changeover and cleaning, and eliminate shaft leakage.

Additional features include increased capacity with less horsepower, increased efficiency with less horsepower, selection of special materials for rotor and stator, including stainless steel, stellite, and chrome carbide; and complete interchangeability of rotor and stator for extreme processing versatility.

Construction details show that the RE colloid mill is water jacketed, has a rotor speed of 10,000 peripheral feet per minute and is designed so entire unit can be inspected, cleaned parts replaced and reassembled in minutes.

The Gaulin two-stage design also provides a micrometer gap setting which is adjustable while running. This combination is said to increase processing efficiency and make it readily adaptable for handling all types of raw materials or for changing quickly from one product to another.



Electric Lift Truck

Armored Pipe and Fittings

Bronze Globe Valve

ARMORED PIPE AND FITTINGS FOR CORROSIVES
(National Carbon)

Karbate* brand impervious carbon and graphite pipe and fittings are now available with an external armoring to protect against accidental breakage.

It is claimed that a strong glass fabric bonded to Karbate impervious carbon pipe not only armors and strengthens the pipe, but in case of breakage, remains intact, holding line pressure and preventing gross leakage. Connections to the flanged Karbate impervious graphite fittings are made through a protective metal housing, which isolates the fitting from external mechanical stresses caused by misalignment or piping expansion or contraction.

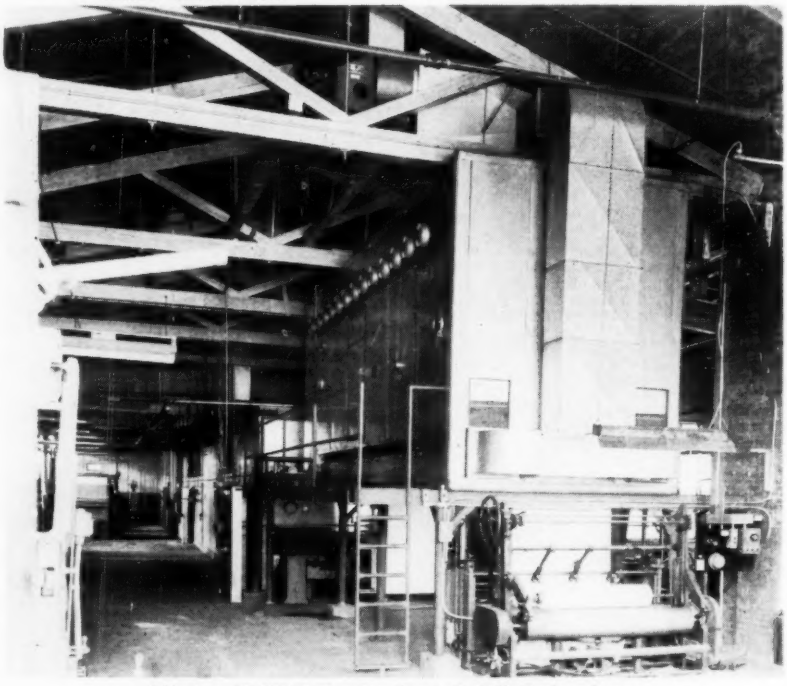
Karbate armored pipe is available in one- to four-inch diameters in lengths up to nine feet, with either flanged or plain ends. Karbate armored fittings, in one- to four-inch pipe sizes, are available as 90-degree elbows, tees, couplings, and flange collars.

The new line of Karbate brand armored pipe and fittings is said to add the advantages of the external glass fabric armoring to the corrosion resistance, freedom from metallic contamination, resistance to thermal shock, and ease of installation.

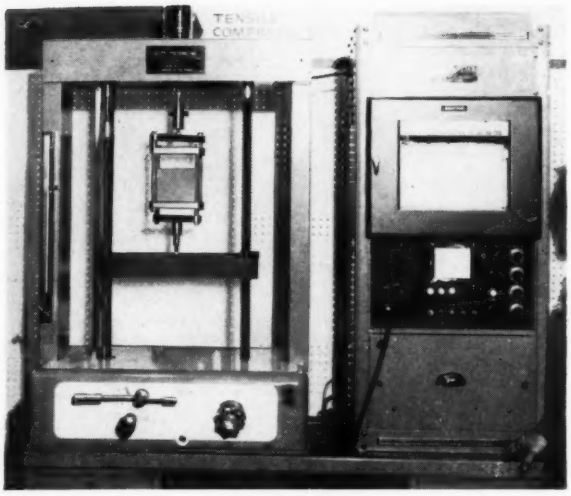
*Registered trade-mark

"NATIONAL" HR-6 TENSION CONTROL ROLL CURING OVEN
(National Drying)

Through more critical control of the essential elements (heat, air circulation, and tension of cloth), it is claimed that this machine has established new standards for curing speeds; uniformity of curing; and quality and hand



"National" HR-6 Tension Control Roll Curing Oven



Model CET

Model STI

of the product. The manufacturer states that it is now possible to control shrinkage to the point where either thick or thin hand can be produced while eliminating break or pinch marks and uneven curing. Because of its precision engineering, compact design and rugged construction there is said to be virtually no maintenance necessary.

pH METER TESTER MODEL 25
(Photovolt)

This compact item is designed to check the performance of any pH meter within a minute or two, without the use of either electrodes or buffers. In this way, the operator can quickly determine whether any difficulties are traceable to the meter proper or to the electrodes.

The instrument was shown for the first time in December, 1955, and the manufacturer claims that no similar instrument has ever been on the market.

pH METER MODEL 85
(Photovolt)

Photovolt's new pH Meter Model 85 is claimed to be the first line-operated pH meter which is offered at a price less than $100.00, complete with electrodes.

It reportedly covers the complete pH range from 0 to 14 and gives a reading accuracy of 0.1 pH unit. It is claimed that stable needle indications are obtained even where the voltage of the power line varies within wide limits. An auxiliary pointer is provided to check the standardization. Model 85 is almost of pocket-size and operates from any AC outlet.

MODEL CET
(Scott)

Model CET is a completely new and radically different addition to Scott Testers' line of physical test apparatus. It is described as "bringing together features of flexibility and precision not heretofore available in any tester, with the result that many different types of materials and constructions can be evaluated on a single machine and their physical characteristics revealed to a degree never before achieved."

Designed to test for tensile, hysteresis and compression within the range, 0-2,000 lbs tensile, the Model CET is a constant-rate-of-elongation tester with a broad range of speeds up to 40″ per minute, lengths of stroke up to 72″, and infinitely variable loading between 0 to 2000 lbs. The electric weighing system is described as the most precise known (accuracy within 0.25%), being free from inertia and accurate at all stages of the test cycle. The system reportedly permits the most detailed analysis of the specimen under test.

Stretch of the specimen can be magnified on the chart up to 200 times actual. A selected significant portion of the stress-strain curve can be isolated and shown full span on the chart, magnified up to 10 times. Specimen elongation is effected by downward motion of the lower crosshead, driven by double screws operating in "ball nut" housings.

Compression testing is accomplished by the same action of the machine, with the specimen in a fixture which exerts compressive force and has a capacity for specimens 15″ square up to 20″ high. For hysteresis (fatigue) testing, the cyclic action of the lower crosshead may be actuated manually, or may be set to continue downward and reverse cycle automatically, with instantaneous change of direction at bottom and top stroke.

Maximum emphasis is placed by the manufacturer on the ability of the CET tester to handle an endless variety of materials with extreme flexibility of loads and speeds, and to manipulate the recording system so that the critical areas of reaction are segregated, magnified and picturized in minute detail and with utmost clarity for study of their fullest significance.

pH Meter Model 85

pH Meter Model 25

MODEL STI
(Scott)

This completely new Mooney shearing disc Viscometer produces the same basic Mooney values as the long-established NBS type. Both conform to the Method of Test in ASTM designations D927-55T and D1077-55T.

While Model STI is for elastomers, those in the textile field who encounter rubber and plastics testing problems will find it of interest.

It reportedly features new ease of operation and maintenance, improved stability of proper operating condition, and added safety features.

Differential Transmitter

200TD FIXED RANGE DIFFERENTIAL TRANSMITTER
(Taylor)

With this new concept in low-cost flow transmission, it is claimed that hitherto unchecked sources of steam, water and air in departmental consumption can now be easily and economically cost-accounted.

The new 200TD offers no barrier to control engineer complete processes in the plant, such as liquid level, consistency, or low-pressure air or gases (up to 10 psi) requiring sensitive transmission readings to an indicating or recording instrument.

(Concluded on page 910)

HIGHLIGHTS OF THE PAST YEAR

P J WOOD
Technical Director
Royce Chemical Co
Carlton Hill, N J

EDITOR'S NOTE: It is a pleasure to bring to our readers for the seventh consecutive year Mr Wood's "Highlights". Many of Mr Wood's observations cover material that has not appeared elsewhere in the American textile trade press.

PREPARATION

WASHING AFTER MERCERIZING, PRINTING, ETC——Getting rid of the caustic after mercerizing is a process that leaves much to be desired. The cotton has a great affinity for the caustic and simple washing with water is not too effective. In order to remove this extreme alkalinity, large amounts of sulfuric acid must be used. The excess of sulfuric acid must also be eliminated in its turn.

A novel method of obtaining enormously increased efficiency out of the wash water used consists of creating tremendous turbulence by using the passage of the cloth through the washer to impel the current of water to impinge violently on another course of the same cloth passing in the opposite direction.

This is accomplished by a clever disposition of the rollers as shown in Figure 1a.

It is said that, even at the comparatively slow rate of 20-25 yards per minute, remarkably efficient washing takes place, but at speeds of from 50 to 125 yards per minute the washing rate is increased out of all proportion to the increase in speed.

This results in much saving of sulfuric acid for neutralizing and also the use of another unit following acidification removes the excess acid in quick order.

It is easy to envision the advantages of using this machine (see Figure 1b) for washing goods in the open width after the caustic boil and also following the peroxide bleach and steaming.

For washing printed goods, this method resolves many problems that have heretofore existed in this delicate operation. It is said that it gives freedom from bleeding and marking off; it occurs to this writer that it should also render goods with better rubbing qualities.

One can well imagine that the washing and soaping of naphthol colors treated on this machine should be freer from rubbing than they are normally.

It is claimed that tension on the goods is minimum.

PRINTING

PRINTING MACHINE FOR HOSIERY——This writer, in common with many other textile fabric printers, made many attempts to print hosiery, and particularly men's socks. The only method possible for many years was to "soap" the socks flat on the back grey and print first on one side then on the other, a method that resulted in far from satisfactory prints. If one attempted to make "clockings" it was next to impossible to be sure that the clocking would fall on the exact spot desired. If an all-over pattern was used, on alternate sides of the sock, it was impossible to insure that any semblance of a "join" would be procured, there was almost always a break between the pattern on the two sides.

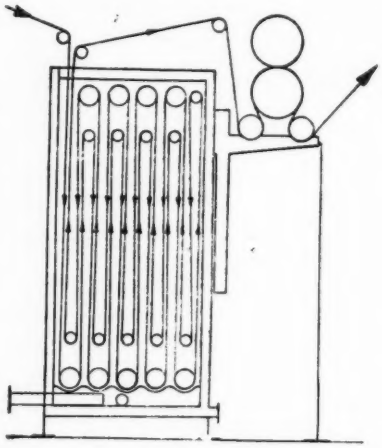


Figure 1a

Now, the pattern can be printed on socks, in much the same way that prints are produced on round containers and bottles, by printing on a special mandrel, so that clocks or all-over patterns can be obtained at will. A separate machine is used for each color to be applied and the mandrel with the stocking on it is printed first on one machine, then on the succeeding machines, which sounds like a long way round, but the operation is said to give completely printed socks at the rate of 80-100 dozen pairs per 8-hour day. The color is printed on the goods by the use of a screen for each of the colors. Any number of colors can be used.

The mandrel holding the sock is fixed in the machine by a simple hole and peg method which automatically places it in each machine to receive the impression in perfect register.

The inventors claim that it is equally suitable for printing stockings made of all types of fibers, wool, cotton or mixtures of these fibers, also for

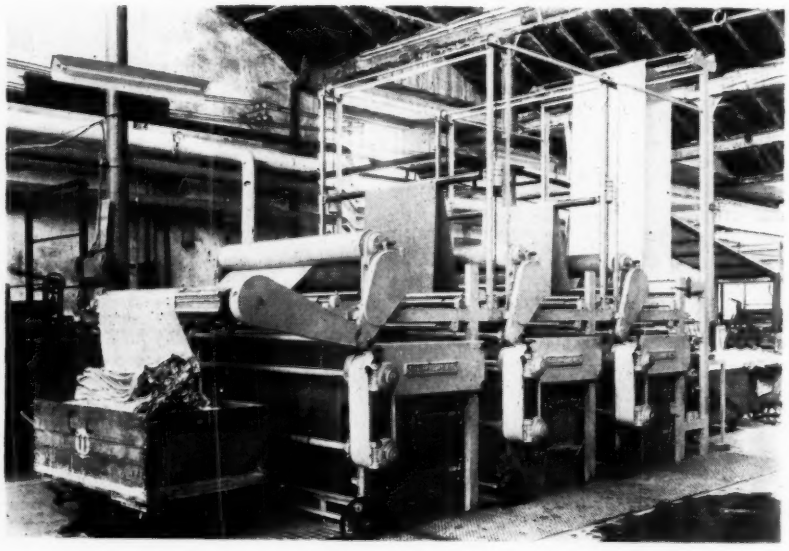


Figure 1b

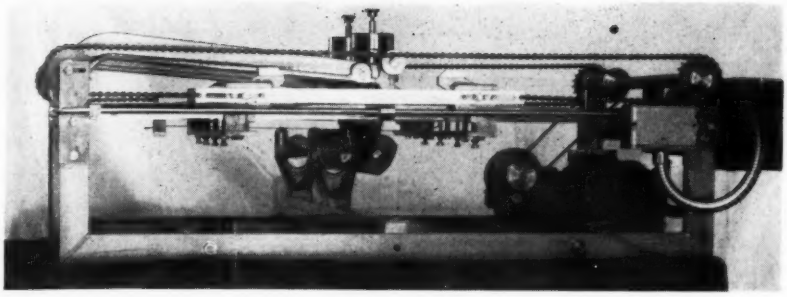


Figure 2a

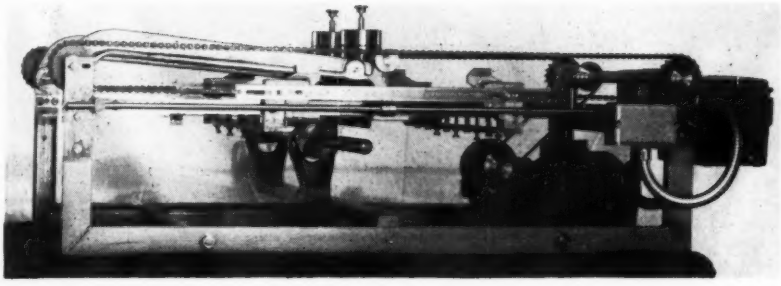


Figure 2b

nylon and all the other new synthetic fibers. They say it does not require supervision of a skilled machine printer, but that it can be used by unskilled operatives who can attain a high degree of efficiency after a very short period of time.

Shown in Figures 2a and 2b are the same machine (one unit—single color) both with and without the sock-carrying mandrel.

VERTICAL ROLLER PRINTING MACHINE——This new roller printing machine (see Figure 3) reminds one of a similar machine invented by D C McGiehan, and we believe that at least one machine was built by John Waldron of New Brunswick, NJ. This was over 25 years ago.

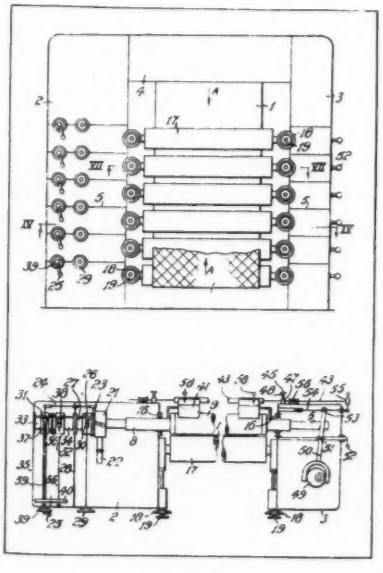


Figure 3

Just what the particular advantage of this machine is, as compared with the regular machine with one drum or cylinder, it is impossible to say, as all we have to serve as a source of information is the publication of the British patent in the *Dyer*, from which the illustrations have been reproduced.

Each printing roller has its own pressure roller and the goods pass progressively from one single color machine, so to speak, to the next, and so on. The sketch shows six of these gadgets in a vertical row.

PROVING MACHINE FOR PRINT ROLLERS——It should be possible to save a lot of productive time on the printing machine by checking the newly engraved rollers on a machine of the type shown in Figures 4a-4d.

When a set of rollers is ready, each roller is taken in turn and mounted in the machine, a doctor blade is inserted in the position shown, the cylinder against which the printing pressure is applied is adjusted by means of the two levers appearing on the front of each of the cheeks of the machine. Then the color is poured into the angle between the print-roller being tested and the doctor blade.

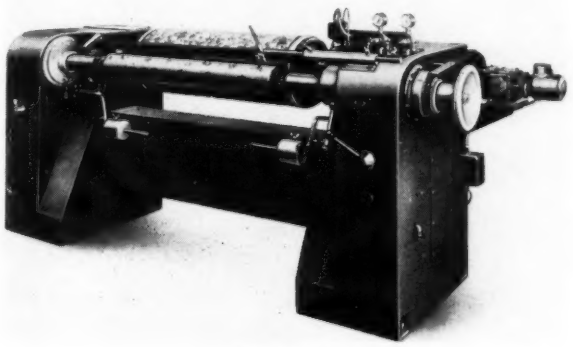


Figure 4a
MSH-Proof Printing Machine

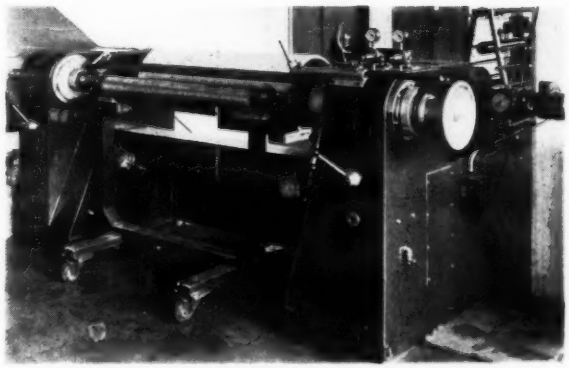


Figure 4b
Roller is taken from the roller carriage pneumatically

The roller is carried to the proving machine on a special truck which delivers it at just the right height to drop into the proper relation to the printing cylinder on which the fabric is placed.

The pitch point is established on the first roller and the other rollers are quickly brought into perfect registration very simply.

In this way, any defects in the engraving are quickly detected and the accuracy of registration is checked, likewise any awkwardness of repeat, stripiness, etc, can be noted and corrected.

After attention to these details, the pattern can be put back into the proving machine for a check-up before handing over to the print-room. This procedure could save a lot of hard words between foreman engraver and boss printer, frequently with benefit to the welfare of their immortal souls.

The inventor says the operation can be carried out entirely by one man, as it does not require the services of a skilled printer.

DYEING

FOUR-ROLL PADDER——A couple of years ago attention was directed in these columns to a three-roll padder, in which the liquor was contained in the space or "valley" between the two parallel upper rolls through which the fabric descended vertically, passing then through the nip formed by one of these rolls and a third roll. An alternate arrangement carried the goods from the first dip and nip into a second treating trough, from which the fabric passed between the second nip, as described (*1*).

Now, what looks like an even more compact and efficient four-roll padder has been put on the market, in which the liquor is contained in the space between the four rolls, each of which impinges on two of the other three rolls, as shown in Figure 5. Dye liquor is also applied in the "valley" between the two upper rollers. This enclosing of the dyebath should insure that vat color liquors will not be exposed to the air, which should surely be advantageous where reduced vats are being used.

Whatever the nature of the bath, the goods receive three complete dips and four nips during the course of the operation, the amount of the liquor is small and the penetration should be good.

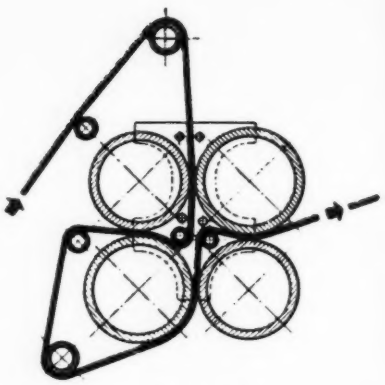


Figure 5

The lateral plates which form the sides of these dyeing spaces are said to contain the liquor satisfactorily. A variable speed (stepless) motor drives the device, a pump circulates the dye liquor through the two dyeing troughs and the dye liquor is provided with an adequate indirect heating arrangement.

AUTOMATIC DYEING MACHINE FOR KNIT GOODS, ESPECIALLY HOSIERY——This ingenious machine is designed for the continuous dyeing of knitted garments and particularly for stockings, so that the garments or hose may be set, scoured, rinsed, dyed, washed, finished, and dried in one process with a minimum of handling.

This requires very close co-ordination of the different parts of the device, in order to give the correct time in each of these operations to produce the results desired. All this is done automatically, the progress of the several operations as regards time and temperature being readily observable on the instrument panel.

In dyeing stockings, it should be possible to produce more regularity of size, as once the hose are on the forms they are never changed until all these operations are entirely complete. There should be less damage also on this account as changes lay the work open to liability of snagging, etc.

It is said that this process gives stockings that are more uniform in color throughout the batch. Where high temperature dyeing is desirable this can also be done on this machine.

Savings in labor and materials are said to amount to from 20¢ to 45¢ a dozen pairs.

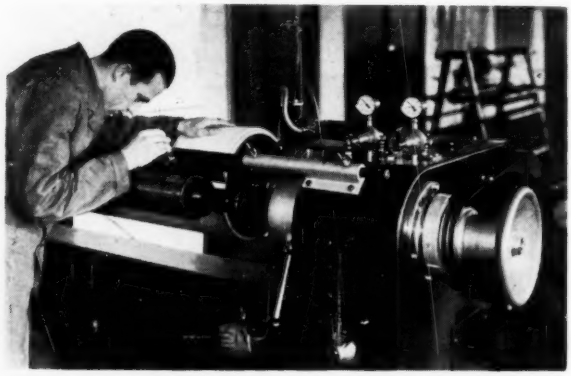


Figure 4c
Registering of the roller

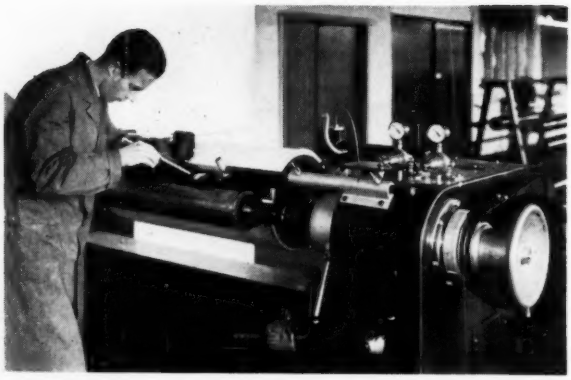


Figure 4d
Feeding with dye

The machine shown in Figure 6 is capable of producing from 120 to 150 dozen pairs per hour with eight operators and a foreman-colorist.

PADDING TUFTED CARPETS.——Changes in the type of dyeing machine and refinements of detail in those machines have been everyday occurrences in the tufted carpet field.

Perfect satisfaction has not been attained, according to reports from the trade, imperfect penetration and uneven dyeing from edge to edge of these difficult wide goods being met with only too frequently.

Finally, a very wide padding machine has been constructed that will give even pressures throughout the entire width of the goods in all widths of carpets from 10 to 20 feet. This even pressure is maintained by means of an ingenious patented device consisting of an air bag running along the whole width of the machine, which applies an even pressure to segmented rollers staggered across the full nip which, in turn, transmit uniform pressure to the upper squeeze roll at every point.

This new type padder also serves as a very satisfactory extractor for removing excess water before drying, another potent contribution toward production of more even coloring of these goods.

Figure 7a shows one of the latest of these padders which is 17½ feet wide at the nip, thus making it amply wide enough to handle rugs of 15 feet width with the greatest of ease.

Figures 7b and 7c show proposed methods of using this padder for vat dyeing and continuous direct dyeing of wide tufted carpet.

DYEING AT ATMOSPHERIC PRESSURE——For dyeing at atmospheric pressure or at high pressure, the Colorfix machine (Figure 8) is said to be able to handle goods of any construction and all fibers, wool, cotton, mixed goods of these fibers, as well as any of the synthetic fibers, either woven alone or in mixture with each other.

The goods are rolled on perforated beams, disposed in the horizontal plane, carried on a carriage, which can be run into horizontal kier, somewhat reminiscent of the Mather & Platt open-width caustic boil-off machine.

The dye liquor is contained in tanks, adjacent to the kier and connected with it by a system of pumps. Provision is made for heating the liquor.

The goods are loaded in the grey state, care being taken to see that

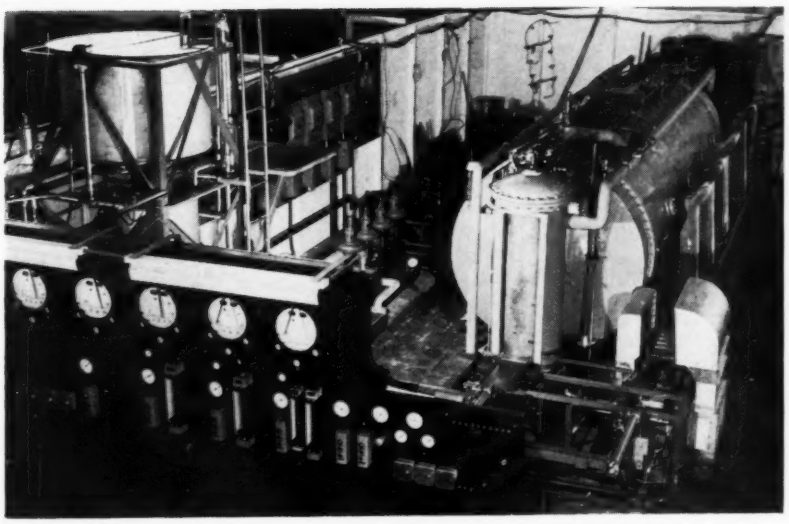


Figure 6

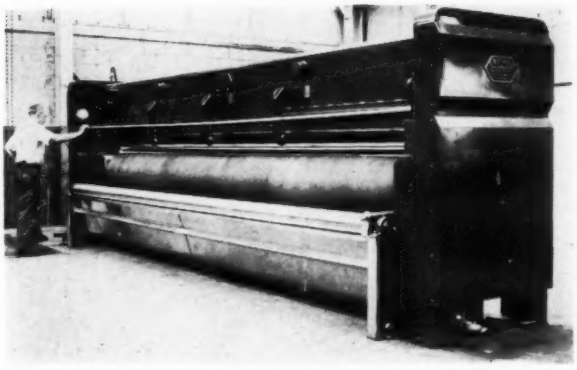


Figure 7a

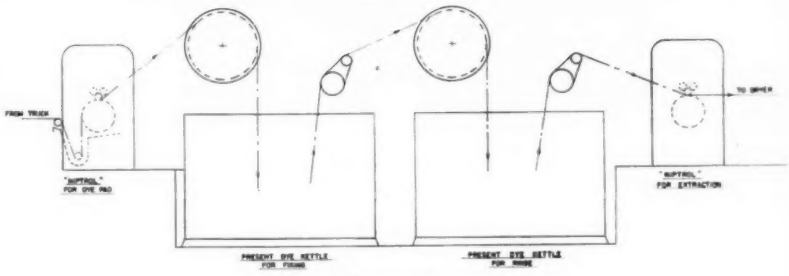


Figure 7b

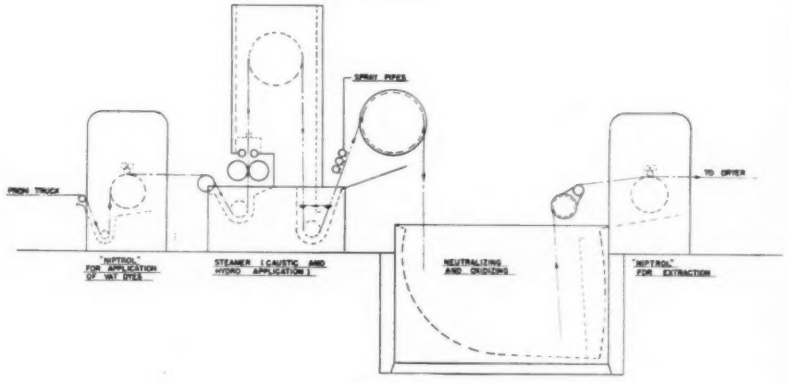


Figure 7c

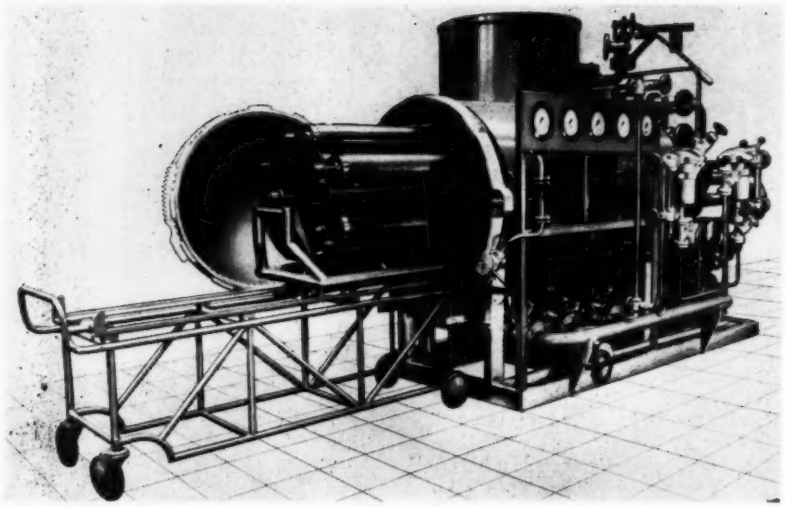


Figure 8

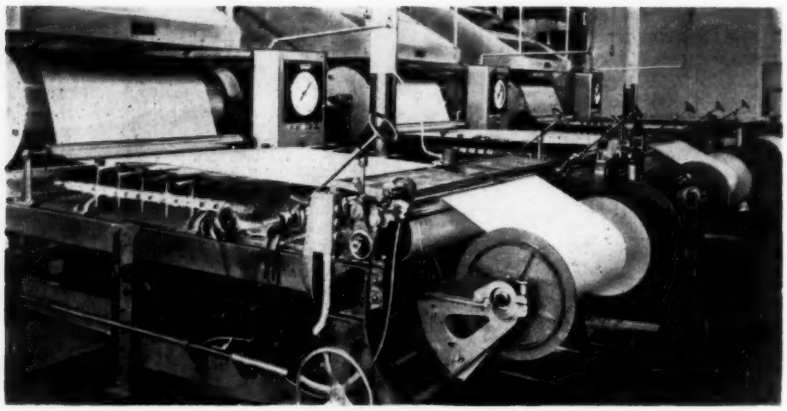


Figure 9

it is rolled up on the perforated beams without creases. Any high-temperature steam-setting of the goods can be applied in the kier, before scouring, which operation is also carried out without disturbing the goods.

Dyeing follows at any desired temperature, below, at or above normal boiling temperature, by regulation of the pressure. A panel board of the necessary instruments serves to show conditions obtaining within the apparatus, at all times.

According to the degree of swelling undergone by the particular fiber, the machine has a capacity of from 100 to 300 pounds of fabric per charge.

It is said that it is equally possible to dye open-width warps on the machine on any type of fiber and with any sort of dyestuff. The same can be said of yarns in package form.

It is especially interesting to note that the new crimped high-twist nylon yarn can be set and dyed in one operation. This not only affords a saving in time of operation, but it avoids some of the damages which occasionally occur during the conventional method of handling such yarns.

INSTRUMENTATION

The amount of residual moisture remaining in textiles, after passing through a drying operation, has much to do with the final appearance and feel of the cloth. In the case of warps, for instance, a bone-dry condition after sizing and drying is not ideal. In the case of dyed or printed goods, the moisture content is of the utmost importance.

This writer is firmly convinced that if a fabric is dried to the absolute zero of moisture content, it is almost impossible to get that mellow hand that most people look for in a finished textile. Much of the "paperiness" in rayon goods, for example, is possibly due to the goods having been over-dried.

The problem of regulating the degree of moisture in textiles has been a difficult one to solve, but the invention of the Moist-O-Graph has gone a long way toward giving automatic control of residual moisture in fibers and fabrics.

Most weavers know the importance of treating sized warps in such a way that the starch size shall not "shed" during weaving. What is found under the loom has no beneficial influence in preventing abrasion of the warp threads. The matter of residual moisture left in the sized warps has an important role to play in preventing shedding. It also has some influence in reducing static, another untoward manifestation in the handling of warps, particularly some of the synthetic fibers.

The Moist-O-Graph pneumatic controller delivers warps and fabrics in any desired condition of moisture content. It controls warp and fabric regain within limits hitherto considered impossible. The improved model of this remarkable apparatus has been almost entirely redesigned to give a device having increased stability, better automatic control, a more consolidated and simplified system, requiring less maintenance.

Too much moisture frequently results in formation of mildew, too little moisture gives rise to brittleness of the fibers and consequent increase in broken ends and chafing, with resultant decrease in weave-room efficiency and down-grading of the finished product.

Although Figure 9 shows only the application to warp sizing, the apparatus is equally effective in paper manufacturing and in textile dyeing, printing and finishing operations and in coating of textile fabrics.

FINISHING

NEW AND IMPROVED CONDITIONING MACHINE———Years ago this writer, then in the silk printing and finishing business, had a Sjorstrom conditioning machine that consisted essentially of a series of rollers which led the goods to be conditioned through a box-like apparatus. Between the vertical plies of cloth were tapes or blankets that dipped into a shallow tank in the bottom of the box. These were endless and carried the water picked up from the tank up between the folds of the travelling cloth. The cloth was cooled by contact with the moisture-saturated air and absorbed quite a great deal of moisture, emerging from the machine with a nice mellow hand.

The machine shown in Figure 10 carries the goods through a similar box-shaped apparatus to which is supplied a constant stream of cooled and moistened air, created outside the box by exposing the air used to the influence of several sprays of water. Any excess water is extracted from the air stream during its pro-

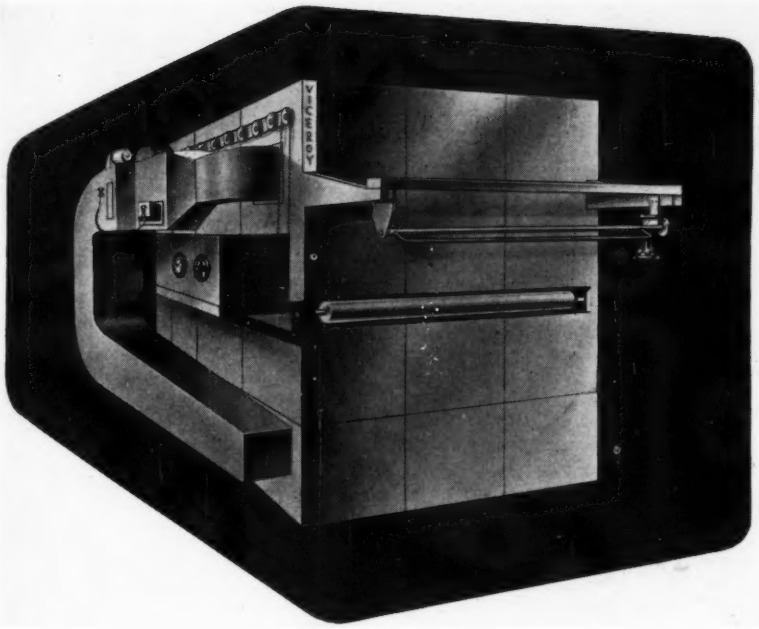


Figure 10

gress to the part of the box in which the goods are passing through in the open width.

It is said that this obviates formation of water spots and results in a more uniform deposition of moisture throughout the fabric.

All significant variables are reduced to a fixed standard. All that is necessary to vary the moisture pick-up is to vary the speed of the machine, by means of the variable speed control device which is fitted to the device.

An example of the result obtainable at a speed of 40 yards a minute is shown in these figures:

Temperature before entering the machine	160°F
Temperature on leaving the machine	66°F
Weight of piece before treatment	68 lbs
Weight of piece after treatment	76½ lbs
Regain before treatment (moisture content)	3%
Regain after treatment	16½%

The cloth is folded down on emerging, but it could be carried directly to the next operation as a step in a continuous process.

BLEACHING

CONTINUOUS BLEACHING WITH SODIUM CHLORITE——What is, perhaps, quite novel about this apparatus is that it seems to be the very first to have been designed particularly for use with sodium chlorite.

It is an open-width bleaching range, said to carry out its work without excessive tension and with no risk of tearing the goods.

The maker claims that, with it, there is absolutely no possibility of over-bleaching (tendering), although the process removes all motes.

Desizing is carried out continuously in this range.

There is no cloudiness or unevenness in the colors dyed on goods that have been bleached in this manner.

As a matter of fact, the machine is not strictly continuous, as the goods are impregnated and rolled up on shells, which are then transferred on special mounts on which they are slowly revolved in the steaming chamber for the necessary period of time, after which it is run off through a 4-compartment open-width washing machine, where it is given hot water, a light peroxide for linen goods, warm water rinse and cold water.

Figures 11a and 11b show the parts of the machine in close proximity, as installed for ordinary use.

WEAVING

REMARKABLE AUTOMATIC LOOM——An Italian inventor has devised a loom that runs without shafts, sley, reed or shuttle. This has nothing to do with dyeing, bleaching, printing or finishing, we are well aware. And yet it may have a profound effect on the work of the finisher.

It is said to be possible to run the machine at a speed of 800 picks a minute and that the machine can be furnished with enough filling to enable it to run for 24 hours continuously.

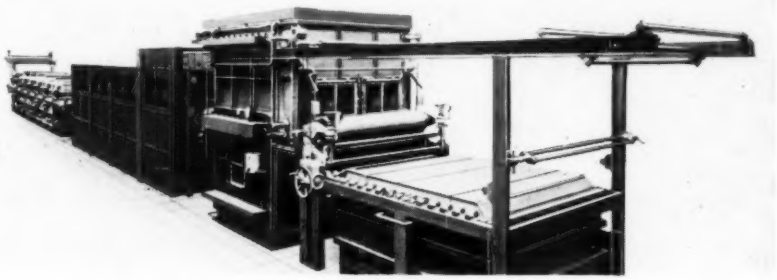


Figure 11a

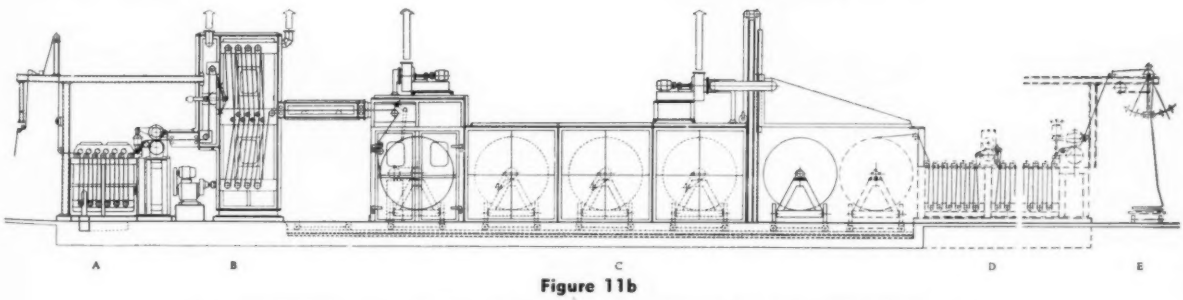


Figure 11b

A—Impregnator; B—Steamer; C—Thermochamber; D—Washer; E—Bleached goods

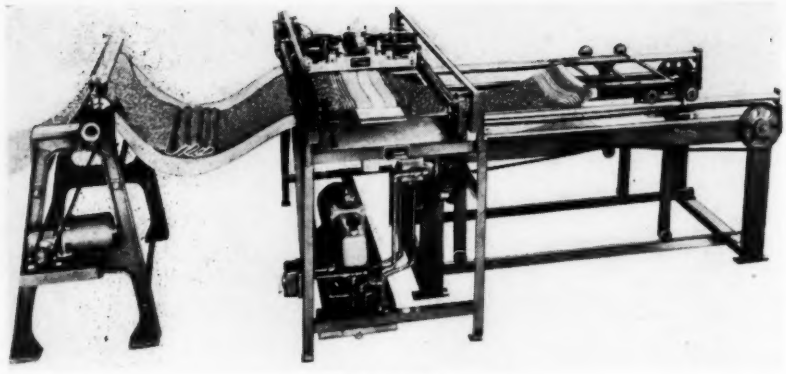


Figure 12

Where the dyer will very likely profit from handling the product of this revolutionary machine is that it is likely that the nonstop nature of the loom should result in more uniform cloth, especially if strict attention is paid to supplying the gadget with a good quality of yarn, which should be a prime requisite in order to run the machine at the speed indicated.

Another interesting fact about the loom, although this has nothing to do with the quality of the resultant product, is that it operates in utter silence. Weird but interesting.

AUXILIARY APPARATUS

MIXER OR HOMOGENIZER FOR COLOR OR FINISH———An apparatus which should be found useful in the print-shop or in the finishing room is a new type of homogenizer, formerly made only in Switzerland, where it was invented. It is now manufactured in this country.

It is said to take advantage of all the forces required for the diminution and rapid dispersion or suspension of particles in a given vehicle.

It consists essentially of two slotted circular blades, the inner one forming the rotor of the system, which seizes the material and flings it with great force against the outer blade constituting the stator. The fluid escaped in the outer part of the machine through the slots in the latter, having not only been subjected to the shearing action of these two elements, but also to the impact of inter-particle collision and friction.

According to the setting of the machine, the substances can be mixed intimately without change of particle size or the particles can be divided and subdivided into very fine particles.

PACKAGE DENSITY TESTER———In packaging dyeing, one of the difficulties with which dyers have had to contend is the irregularity of density of the packages of yarn.

By means of this useful gadget, it is possible to assort the packages according to density, so that uniform conditions, as regards package density, can be obtained in any one dyeing. The tests are quickly made and it seems to this writer that the time consumed in carrying out this classification is time well spent, as there is no doubt whatever that the more uniform set of packages in the machine will result in more uniform flow of the dye liquor through the packages and hence more even dyeing throughout the batch.

The density of the yarn is determined by checking its permeability to a constant pressure stream of air fed into the core of the package, the resistance to the flow of the air being recorded on a convenient scale.

MAKING UP

CUTTING MACHINE FOR TOWELS AND SCARVES———Even with all the precautions that the finisher may take in beaming, rebeaming and tentering square-set goods, scarves, towels, etc, great difficulty is experienced in cutting such goods exactly on the line.

With the apparatus illustrated in Figure 12, this difficulty is reduced to the minimum, as the cutting blade is guided automatically by an electric "eye" which keeps it exactly on the line.

This elimination of the human element not only gives better work but it increases the production. The maker says it can be run at the rate of from 15 to 40 units per minute. The machine is fully automatic. The goods are pulled by the machine into the cutting position, the knife follows the line exactly, no matter whether straight or crooked, and the cut articles are stacked neatly. All the operator has to do is to place the continuous fabric at the entering end of the machine and remove the cut squares from the other end.

REFERENCE

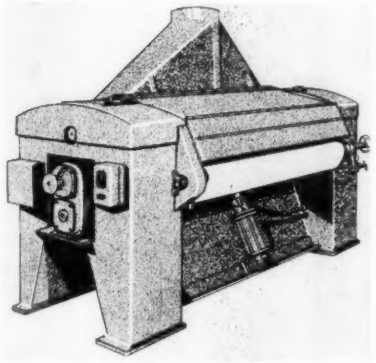
(1) Wood, P J, *Am Dyestuff Reptr* **44**, No. 25, 864 (Dec 5, 1956).

Equipment———

(concluded from page 903)

The new 200TD measures 6½" x 3"; weighs 4½ lbs; can be pipe mounted; all connections ¼" internal NPT; a wrench and screw driver can install and adjust it on stream for zero. Its diaphragm is neoprene-impregnated nylon. Body material is brass. Maximum working pressure; 150 psi; temperature 150° F. Air supply pressure 20 psi. Air consumption, 0.10 standard cu ft per minute. Output pressure range 3 to 15 psi.

Calibration accuracy is said to be better than 1%. Sensitivity exceeds 0.1%. Ranges: 0 to 50, 100, 200 and 300 inches of water.



Turbo Electro-Finisher

TURBO ELECTRO-FINISHER
(Turbo)

This is a new development for the finishing of fur-like high pile fabrics of either knitted or woven construction.

The Electro-Finisher is used to raise the pile of the fabric and impart the fur-like characteristics desired. It consists of an electrically heated cylinder, controlled by instruments so that a constant preset heat is maintained. The cylinder has special grooves that separate and straighten the fibers and give the fabric a fur-like hand. A pneumatically controlled endless conveyor brings the cloth in contact with the cylinder at the speed and pressure desired.

The company notes that the machine, while used principally on high pile blends of Orlon and Dynel at present, may also be used with other long hair or pile fabrics such as wool, nylon, and rayon, by adjusting the temperature of the cylinder and the tension on the conveyor.

The machine is designed to handle fabrics up to 54 inches in width, at speeds ranging from two to 20 yards per minute.

TURBO MACHINES FOR HIGH PILE FINISHING
(Turbo)

In addition to the Electro-Finisher, Turbo has developed two other machines used in high pile finishing—a shearing machine and a wet applicator or swabbing machine.

The Turbo shearing machine is used for rough-shearing before the pile is raised and strengthened, and also for final shearing. An exclusive feature is a fabric conveyor which can be adjusted for the proper cut. The operator uses a micrometer adjustment located within easy reach on the front of the machine. Depth of cut can be varied from ten-thousands of an inch to one-half an inch. Blades can be resharpened by reversing the main cylinder and running it against the main bed knife. The machine is complete with motors and blower for suction table.

The Turbo wet applicator dampens the pile of the fabric at speeds that can be varied from two to 20 yards per minute. Brushes can be positioned to control the amount of liquid applied to the pile. Excess liquid drains back into the pan and can be re-used. The pan is easily removable for cleaning or when a different solution is used. All parts are stainless steel. The wet applicator can be used on materials other than high pile fabrics where a controlled wetting is required.

Proceedings of the
American Association of Textile Chemists and Colorists

Copyright, 1956, American Association of Textile Chemists and Colorists

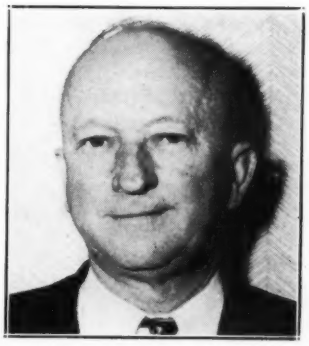
December 3, 1956

LINBERG ELECTED 14th AATCC PRESIDENT

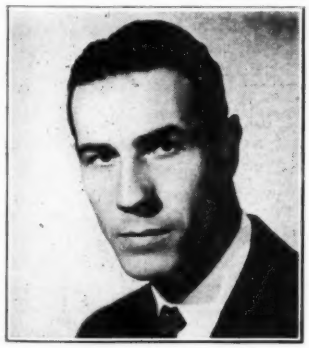
KASWELL, HELMUS, SMITH AND MORRILL VP's FOR '57

GEORGE O LINBERG

ERNEST R KASWELL



H GILLESPIE SMITH



WELDON G HELMUS

ELLIOTT MORRILL

GEORGE O Linberg, vice-president of Synthron, Inc, Ashton, RI, has been elected 14th president of the American Association of Textile Chemists and Colorists. He will take office January 1, succeeding Raymond W Jacoby, Ciba Co, Inc, New York.

Four regional vice-presidents elected with Mr Linberg are: Weldon G Helmus, vice-president and general manager, Fair Lawn Finishing Co, Fair Lawn, NJ, vice-president for the Central Atlantic Region; Ernest R Kaswell, president and associate director, Fabric Research Laboratories, Inc, Dedham, Mass, vice-president for the New England Region; H Gillespie Smith, southeastern manager, American Cyanamid Co Dyestuffs Department, vice-president for the Southern Region; and Elliott Morrill, plant manager and technical director, The Best Foods, Inc, Indianapolis, Ind, vice-president for the Western Region.

Membership Applications

SENIOR

Eugene M Allen — Group leader, American Cyanamid Co, Bound Brook, NJ. Sponsors: A F Klein, H E Millson

Irwin M Ames—Textile chemical salesman, Onyx Oil & Chemical Co, Jersey City, NJ. Sponsors: P D Jacobs, W C Walter, Jr

James B Baskin—Chief chemist, F C Huyck & Sons, Aliceville, Ala. Sponsors: C R Barnes, Jr, R H Beaumont, Jr

Esther L Batchelder—Chief, Clothing & Housing Res Br, Agricultural Res Service, US Dept of Agriculture, Washington, DC. Sponsors: M S Furry, V J McLendon

Frank Bleyer—Supervisor, Lee Dyeing Co of Canada, Ltd, Lachine, Quebec, Canada. Sponsors: E A Chevrette, M Fishman

Norman Brunelle—Quality control supervisor, Munsingwear, Inc, Minneapolis, Minn. Sponsors: W B Broadbent, S M Littlejohn

Douglas G Channon—Snr lab tech, Arnold, Hoffman & Co, Inc, Providence, RI. Sponsors: L S Gifford, Jr, C H Pillsbury, Jr

Harry E Conner—Research chemist, Libbey-Owens-Ford Glass Co, Toledo, O. Sponsors: H A Lips, H T Latham

Albert I Darbey—Assistant dyer, Strong Hewat Co, North Adams, Mass. Sponsors: H Gendreau, H L Schwarz

Douglas F Dix—Dye supervisor, Union Bleachery, Greenville, SC. Sponsors: L E Usry, C W Brooks

Joseph V Einstein—Overseer of finishing, Capitol City Woolen Mills, Des Moines, Ia. Sponsors: A G Alexander, E L Moore

Walter R Howell, Jr—Textile sales, Bradford Dyeing Association (USA), New York, NY. Sponsors: W R Howell, G E Linton

Donald E McGuffin—Buyer, Dow Chemical Co, Midland, Mich. Sponsors: L C Cloninger, N W Abernathy

Francis W McKenna — Colorist, USF-Aspinook Finishing Div, Gera Corp, Aspinook Plant, Jewett City, Conn. Sponsors: M J Quigley, E W Counsell

George E Mona—Chemist, Glenlyon Print Works, Phillipsdale, RI. Sponsors: G T Roberts, B Frankfurt

S James O'Brien—Group leader, Textile Resins Res Section, American Cyanamid Co, Bound Brook, NJ. Sponsors: J M Salsbury, N J Glade

Cleveland M Ross — Shift dyer, Union Bleachery, Greenville, SC. Sponsors: C W Brooks, E G Jones

John A Simmons—Resin development, Lanett Bleachery & Dye Works, West Point, Ga. Sponsors: A Fisher, Jr, L L Bamberger

Joseph R Wiebush—Director of research, Nat Inst of Drycleaning, Inc, Silver Spring, Md. Sponsors: R T Graham, E R Clark

Robert C Wilkie—Research & develop dir, Ludlow Mfg & Sales Co, Needham Heights, Mass. Sponsors: E B Bell, W B Kaupin

JUNIOR

Francis B Percarpio—Supervisory trainee in dyeing-finishing, Print Plant, Northern Dyeing Corp, Castle Creek Prints, Inc, Washington, NJ. Sponsors: S S Hockridge, R M Lesh

Austin H Whitlock—Foreman & assist dyer, The Jefferson Mills, Inc, Jefferson, Ga. Sponsors: R W Cobb, W B Griffin

ASSOCIATE

Richard P Boyd—Salesman, American Cyanamid Co, Dyes Dept, Charlotte, NC

Virgil H Hampton—Assist mgr, Fairfax Mill, West Point Mfg Co, Fairfax, Ala

Albert J Natterman—Sales repres, Western Carloading Co, Los Angeles, Calif

Gary Thomas—Salesman, Onyx Oil & Chemical Co, Jersey City, NJ

APPLICATION FOR TRANSFER TO SENIOR MEMBERSHIP

James K Brown
William R Martin, Jr
Joseph M Mellion
Edward A Schlirf

AATCC Calendar

COUNCIL
Jan 18 (Hotel Statler, New York); Mar 29 (Roanoke, Va); June 7 (New York)

NATIONAL CONVENTIONS
Nov 14-16, 1957 (Hotel Statler, Boston); 1958 (Hotel Conrad Hilton, Chicago); 1959 (Sheraton Park and Shoreham Hotels, Washington, D C); 1960 (Philadelphia, Pa); 1961 (Buffalo, NY)

MID-WEST SECTION
February 16 (Hotel Bismarck, Chicago, Ill)

NEW YORK SECTION
Jan 23, Mar 1 (Hotel Delmonico, New York, NY); Apr 26, May 24—ladies nite (Kohler's Swiss Chalet, Rochelle Park, NJ); June (Annual Outing)

NIAGARA FRONTIER SECTION
Dec 7, Jan 11, Mar 15 (Buffalo, NY); Apr 5 (joint meeting with CATCC at Kitchener, Ont)

NORTHERN NEW ENGLAND SECTION
Dec 7 (Annual Meeting—Hotel Vendome, Boston)

PHILADELPHIA SECTION
Dec 7 (Kugler's Restaurant, Philadelphia, Pa)

RHODE ISLAND SECTION
Dec 6 (Annual Meeting, Johnson's Hummocks Grille, Providence, RI)

SOUTHEASTERN SECTION
Dec 8 (Atlanta, Ga)

Employment Register

This column is open for two insertions per year, per member, without charge. Blanks can be obtained from, and filed with, the secretary of the Association, Post Office Box 28, Lowell, Mass. It is understood that these will be open to inspection by prospective employers who can obtain further information from the secretary.

56-13

Education: Bradford Durfee Technical Institute—graduated 1951—BS textile chemistry; City College of New York—industrial management and psychology.

Experience: Six years chemist and head dyer—natural and synthetic fibers.

Age: 29; married, veteran. References; no location preference. Position desired: production manager, dyer-chemist.

11-19, 12-3

56-14

Education: Bradford Durfee Technical Institute, 1951, BS, textile engineering; Norwich Univ & Mass State College, army specialized training; Boston Univ, business law (one summer).

Experience: 4 years dyeing and finishing natural and synthetic fibers; sales representative.

Age: 29; single, veteran. References; no location preference. Position desired: sales engineering.

11-19, 12-3

1956 Intersectional Contest Third-prize Winner———

AN INVESTIGATION OF ROLLER PRINTING ON WOOL*

RHODE ISLAND SECTION

C ERIC NEALE, *chairman and speaker*
Apponaug Co

ARTHUR W GROVER, *vice chairman*
Enterprise Dye Works, Inc

GEORGE T ROBERTS, *secretary*
Glenlyon Print Works

EDWARD J ALLARD
Allied Chemical & Dye Corp

KENNETH J BRODEN
Sherwin-Williams Co

WILLIAM H CADY

FRANCIS H CASEY
Sandoz Chemical Works, Inc

ERNEST J CHORNYEI
Bradford Dyeing Assoc

ALBERIC T DI MASI
Products Development Laboratory

COMMITTEE

KENNETH L DORMAN
Franklin Process Co

EDWARD H GAMBLE
E I du Pont de Nemours & Co, Inc

DAVID C HARDMAN
GERSON HERMANN
Eastern Color & Chemical Co

RICHARD A HOWARTH
Arnold, Hoffman & Co, Inc

DAVID R MEIKLE
Stillwater Worsted Mills Inc

ALDEN D NUTE
American Cyanamid Co

W GEORGE PARKS
Univ of Rhode Island

HARRIS V PETELLE
Interchemical Corp

ROBERT H PHILLIPS
Cranston Print Works Co

EMORY A RICHARDS
Florence Dye Works, Inc

ERIC A SCHLAGINHAUFEN
Geigy Chemical Corp

RAYMOND B TAYLORSON
Verona Dyestuffs

FRANCIS L TOHER
Allied Chemical & Dye Corp

HELMUTH VITS
Cranston Print Works Co

HENRY F WEIDMAN
General Dyestuff Co

The primary objective of this study was to find the most practical method of roller printing on wool with conventional equipment without basic alteration.

The secondary objective was to produce a fabric of sufficient color fastness and dimensional stability to withstand laundering. All trials were made on dress-weight material. Various chlorinations, bleaches and pH factors were investigated for the best color yield. Certain pretreatments to prevent fiber damage and aftertreatments to increase fastness were examined. Several classes of dyestuffs were tested.

INTRODUCTION

THE art of textile printing is as old as civilization. It is said to have originated in India, which was noted for its printed calicoes. From there it spread into Egypt. It was introduced into Europe by the Dutch, and reached England about 1676.

The earliest printing seems to have been done by the stencil method. Block printing was probably used first in China, and was practiced in Germany as early as the 11th Century. It was in use in England until the introduction of roller printing.

The first practical roller printing machine was invented by a Scotchman named Bell in 1783. The machines in use today, except for refinements of construction, are practically the same as Bell's, according to Wood *(1)*.

There is an abundance of information in the literature on the roller printing of cotton and rayon, but very little on wool. Probably the most complete treatise on printing is the well-known book "The Principles and Practice of Textile Printing" *(2)*. In the 3rd edition (1936), in a rather brief section on Wool Printing, the authors stated, "Wool may readily be printed with every type of dyestuff except Indigo, Sulphur and Azoic colors, and a few special colors prepared for acetate silk." They described the application of acid, metallized acid, and mordant dyes and Indigosols, also vat dyes applied by the Rongalite-potash process.

Farrington *(3)*, writing twelve years later, was more conservative. In an article on "Textile Printing," after discussing the application of dyes to cellulosic fibers in much detail, and to silk in a brief paragraph, he stated, "In the printing of other animal fibers we have not progressed very far. . . . Not only are we scarcely able to print vat dyes (on wool), but the insoluble azo dyes cannot be applied at all. . . . Resist styles have not yet been achieved, whilst the discharge style is barely adequate. . . . There is no tougher problem at the moment than the printing in fast colors of the oldest mixture, viz, cotton and wool."

Potter *(4)*, in an article on "The Printing of Wool" in 1955, makes brief reference to block, screen and roller printing of piece goods, but his main topic is vigoureux printing of slubbing.

It is the consensus of this Committee, after searching the literature, that roller printing of wool piece goods is a subject that has been neglected in the past and deserves further investigation, particularly in the production of fast colors.

THE PHYSICS AND CHEMISTRY OF WOOL

Wool is a complex protein animal fiber, called keratin, and for textile purposes it is divided into many grades of fineness, length of fiber, color, luster and softness. It varies with the geographical location, climate, soil condition and type of animal. The physical and chemical characteristics of wool vary in different parts of the fleece and even in a single fiber. Chemically it is made up of closely packed long polypeptide chains with salt and cystine cross-linkages.

The keratin fiber is composed of three elements: the cuticle, an outer scaly layer; the cortex, constituting the body of the fiber; and the medulla, or core, found only in the lowest grades. The cuticle is chemically similar to the cortex in composition, but contains more cross-linkages and is more resistant to chemical and biological attack. The fiber contains 18 different amino-acids, and a variety of side chains is possible. The presence of free amino and carboxylic acid groups gives it a high degree of reactivity and dyeability.

Trotman *(5)* noted that sulfuric acid with sodium hypochlorite reacted more on the cortex and the epithelium (cuticle) of wool suffered less damage than when hydrochloric acid was used with the hypochlorite.

Speakman *(6)* has suggested that it is the disrupting of the cystine bridges of the cuticle that makes wool non-felting and shrink-resistant, therefore

*Presented by C Eric Neale on September 15, 1956, during the Perkin Centennial at the Waldorf Astoria, New York, NY

any oxidizing agent capable of breaking the disulfide cross-linkage of the cystine group is of interest.

TREATMENTS——When wool is treated with certain oxidizing agents (eg, hypochlorite), either acid or alkaline, it undergoes several changes, which include the following *(7)*:

1) The wool becomes shrink-resistant.
2) It has increased solubility in dilute acids and alkalis.
3) The affinity for water is increased.
4) The affinity for dyes is altered.
5) The sulfur and nitrogen content is decreased.
6) The isoelectric point is changed.
7) There is a loss in weight.

The effect of the pH of the chlorination pretreatment in dyeing wool so treated is as follows *(8)*:

At pH 4 or less: dyed more deeply than untreated.

At pH 4-6: equal to untreated.

At pH 6 or higher: untreated dyed deeper than treated.

PRETREATMENTS OF WOOL——As the general laboratory evaluations of the prints made with various classes of dyes progressed, it became readily apparent that some factor was giving variable results, particularly with respect to color yield. Correlation of the factors involved demonstrated that the sample fabrics, being from several sources, had been exposed to widely varying pretreatments. Therefore it was considered essential to study the problem of which specific pretreatment would give the maximum color yield with minimum degradation. To that end the following group of experiments was planned and carried out on a plant scale, using as fabric a 9-oz wool challis. The goods were scoured and dried, then portions were treated as follows:

A) An alkaline chlorination using sodium hypochlorite and potassium permanganate at a pH of 8-9 *(9)*.

B) An acid chlorination using 4% sodium hypochlorite adjusted to a pH of 2 with hydrochloric acid by the batch method.

C) An acid chlorination using 4% sodium hypochlorite adjusted to a pH of 2 with sulfuric acid by the batch method, divided into two treatments:
   1) Water-bath ratio 30:1
   2) Water-bath ratio 100:1

D) A treatment with Caro's acid *(10)* (permonosulfuric acid, H_2SO_5) as a continuous method.

E) 12% acid-colloid resin solution padded with 60% pickup, dried and cured at 280° F for 5 minutes.

F) Control sample not treated.

Vat colors in a conventional alkaline reducing print paste were machine-printed on small samples which had the following pretreatments:

1) a) Not treated.
   b) Not treated; bleached.
2) a) Chlorinated with addition of hydrochloric acid.
   b) Same, followed by bleaching.
3) a) Chlorinated with addition of sulfuric acid.
   b) Same, followed by bleaching.
4) a) Alkaline chlorination.
   b) Same, followed by bleaching.

After seeing the prints on the above samples, it was felt that a neutralization or adjustment of the pH of the wool after pretreatment might improve the color yield on these prints still further. The pretreatments were therefore repeated, and treatments with Caro's Acid, an acid-colloid resin, and formaldehyde were included.

In each experiment the fabric after the pretreatment was divided into four portions and further treated as follows:

1) Control, untreated except for chlorination or oxidation.
2) Same as 1, but neutralized to a pH of 8.5 with tetra-sodium pyrophosphate.
3) Bleached by batch method, using:
   0.3% tetra-sodium pyrophosphate
   3.0% hydrogen peroxide 30%
   0.05% ammonia 26%
   Treated 3½ hours at 120° F at pH 7.5, rinsed and treated in 0.3% sodium hydrosulfite for 1½ hours at 120° F, rinsed and dried.
4) Same as 3, but neutralized and bleached as above.

All samples were printed with:

A) Vat colors in conventional print pastes. Printed and dried, neutral-aged 7 minutes, oxidized, soaped, rinsed and dried.

B) 1) Insoluble azo colors.
   2) Leuco vat esters by the chlorate process. Printed, dried, acid-aged 10 minutes, neutral-soaped for 5 minutes at 120° F, rinsed and dried.

It was found that neutralizing or adjusting the pH to 8 following any of the chlorinations or pretreatments definitely improves the color yield of the prints.

LABORATORY PRINTING OF WOOL

All classes of dyes considered suitable for printing on wool were investigated, with the exception of acid and basic dyes, which, while in current use, were considered unsatisfactory in fastness to washing and light (the wet fastness of these two dye classes can, however, be improved by an aftertreatment with a silicone-type water repellent).

The dyes of each class were printed as follows.

A) Selected Direct Dyes:

Benzo Fast Orange S	(*CI* 326)
Benzo Blue RW	(*CI* 512)
Diamine Scarlet 3B	(*CI* 382)
Diamine Green B	(*CI* 593)

were printed by the formula

2-6%	above dyes
3%	Cellosolve
10%	urea
31-35%	water
50%	gum tragacanth
100%	

on chlorinated wool and on chlorinated and acid-colloid-resin-treated wool, dried.

a) Neutral-aged for 5 minutes
b) Steamed for 1 hour, neutral soaped at 120° F, rinsed and dried.

B) Selected Premetallized Acid Dyes:

Premetallized Acid Pink B	(Pr 389)
Premetallized Acid Blue GG	(Pr 144)
Premetallized Acid Orange R	(Pr 146)

were printed by the following formula

3%	of above dyestuffs
6%	urea
3%	thiodiethylene glycol
15%	hot water
13%	cold water
50%	sodium alginate thickener (4%)
10%	ammonium tartrate 1:5
100%	

on chlorinated-bleached and chlorinated-unbleached wool, dried, and steamed as follows

a) neutral-aged 6 minutes
b) neutral-aged 12 minutes
c) steamed ½ hour
d) steamed 1 hour

neutral-soaped for 2 minutes at 120° F, rinsed and dried.

C) Selected Premetallized Neutral Dyes:

Premetallized Neutral Orange R	(Pr 590)
Premetallized Neutral Red B	(Pr 591)

Premetallized Neutral Violet R (Pr 592)

were printed by the following formula

3% of above dyestuffs
10% urea
10% triethylene glycol
27% water
50% sodium alginate thickener (4%)

on chlorinated-bleached and chlorinated-unbleached wool, dried, and steamed as follows

a) neutral-aged 6 minutes
b) neutral-aged 12 minutes
c) steamed ½ hour
d) steamed 1 hour

neutral-soaped for 2 minutes at 120° F, rinsed and dried.

D) The insoluble Azo Dyes were printed by two different methods:

1) Insoluble Azo Red G (Pr 168)
Insoluble Azo Blue D (Pr 164)

6% of above dyes
1% NaOH 72° Tw
24% water
69% starch thickener
100%

printed on

a) chlorinated-bleached wool
b) chlorinated-acid-colloid-resin-treated wool

dried, acid-aged 2 minutes; neutral-soaped 2 minutes at 140° F, rinsed and dried.

2) Neutral-aging Insoluble Azo Red G (Pr 168)
Neutral-aging Insoluble Azo Brown IR (Pr 466)

6 % of above dyes
1.5% NaOH 72° Tw
6 % denatured alcohol
16.5% water
70 % starch thickener
100 %

printed on

a) chlorinated-bleached wool
b) chlorinated-acid-colloid-resin-treated wool

dried, acid-aged
a) 2 minutes
b) 15 seconds

neutral-soaped 2 minutes at 140° F, rinsed and dried.

E) The Leuco-Vat Esters (or Soluble Vat Dyes) were printed by two different methods:

1) *Chlorate Process*

3% Leuco-Vat-Ester Blue IBC (*CI* 1113)
3% Leuco-Vat-Ester Brown IRR (Pr 121)
3% Leuco-Vat-Ester Orange HR (*CI* 1217)
3% Leuco-Vat-Ester Green IBA (*CI* 1101)
1% Leuco-Vat-Ester Golden Yellow IGK (Pr 291)
5% Leuco-Vat-Ester Black B (*CI* 1102)
1-5% of above dyes
8% urea
26-22% hot water
51% starch-tragacanth
6% sodium chlorate 1:2
6% ammonium sulfocyanide 1:1
2% ammonium vanadate 1:100
100%

printed on chlorinated wool, dried, acid-aged 10 minutes,
neutral-soaped 2 minutes at 140° F, rinsed and dried.

2) *Lead-Chromate Process*

	Amt of amm sulfocyanide 1:1
1% Leuco-Vat-Ester Golden Yellow IGK (Pr 291)	0%
3% Leuco-Vat-Ester Orange HR (*CI* 1217)	3%
2% Leuco-Vat-Ester Pink IR (Pr 109)	4%
2% Leuco-Vat-Ester Pink B (Pr 108)	4%
2% Leuco-Vat-Ester Red Violet IRRN (Pr 503)	4%
3% Leuco-Vat-Ester Blue O4B (*CI* 1184)	4%
2% Leuco-Vat-Ester Blue GCD (*CI* 1112)	4%
3% Leuco-Vat-Ester Brown IRR (Pr 121)	4%
5% Leuco-Vat-Ester Black B (*CI* 1102)	2%

1-5% of above dyes
8% glycerine
31-23% hot water
60% special thickener (see below)
0-4% ammonium sulfocyanide 1:1
100%

Special Thickener

22% lead chromate 60%
8% glycerine
60% starch-tragacanth
10% water
100%

printed on chlorinated wool;
dried, acid-aged 10 minutes,
developed 15 seconds in 2% hydrochloric acid and 0.5% oxalic acid (by volume) at 160° F,
rinsed, neutralized 6 seconds in 2% sodium bisulfite cold;
rinsed, neutral-soaped 2 minutes at 140° F,
rinsed and dried.

F) White discharge prints were made on wool samples prepared with the following dyed grounds:

Premetallized Acid Blue 2G (Pr 144)
Premetallized Acid Bordeaux R (Pr 145)
Premetallized Acid Yellow BE (Pr 330)
Premetallized Acid Orange G (Pr 315)
Chrome Cyanine GR (*CI* 722)
Chrome Blue B (*CI* 720)
Chrome Brown DME (Pr 253)
Chrome Red B (*CI* 216)

The following discharge print pastes were used:

1) 15% thiourea dioxide *(11)*
10% water
50% tragacanth (6%)
4% thiodiethylene glycol
4% glycerine
2% resorcine
15% zinc oxide
100%

2) 20% sodium formaldehyde sulfoxylate
5% water
50% tragacanth (6%)
4% thiodiethylene glycol
4% glycerine
2% resorcine
15% zinc oxide
100%

3) 40% Pigment White *(12)* (RB 81)
10% discharge extender
{ 58.4% water
{ 4.9% modified vegetable gum
{ 36.7% mineral spirits
20% water
30% zinc sulfoxylate formaldehyde
100%

G) Pigment application prints were made with 4 resin-bonded pigments:

Pigment Yellow (RB 90)
Pigment Red (RB 60)
Pigment Blue (RB 20)
Pigment Green (RB 40)

in the following oil-in-water emulsion:

Printing Extender (13)
15% methylcellulose 4%
1% nonionic emulsifier
2% oil-soluble resin
39% water
43% mineral spirits
100%

a) 85 parts printing extender
15 parts synthetic latex
10 parts Pigment Blue
b) 85 parts printing extender

15 parts synthetic latex
6 parts Pigment Green

c) 85 parts printing extender
15 parts synthetic latex
6 parts Pigment Red

d) 85 parts printing extender
15 parts synthetic latex
4 parts Pigment Red
2 parts Pigment Yellow
1 part Pigment Blue

on chlorinated wool samples, dried, cured for 4 minutes at 280° F, neutral-soaped, rinsed and dried.

H) Vat Dyes

Anthraquinone Vat Yellow GK (*CI* 1132)
Indigoid Vat Blue 4B (*CI* 1184)
Indigoid Vat Pink FF (Pr 109)
Anthraquinone Vat Jade Green (*CI* 1101)
Indigoid Vat Brown G (Pr 121)

were printed in four different formulations:

1) *Thiourea Dioxide Method (11)*
10% vat dye paste
10% propylene glycol
10% thiourea dioxide
2% sodium benzylsulfanilate
8% water
60% starch-trag thickener
100%

2) *Buffered Alkaline Reduction Method*
10% vat dye paste
15% ethylene diamine
10% sodium sulfoxylate formaldehyde
10% glycerine
55% starch-British gum thickener
100%

3) *Neutral Reduction Method*
10% vat dye paste
3% thiodiethylene glycol
3% diethylene glycol
25% zinc sulfoxylate formaldehyde
59% tragacanth thickener
100%

4) *Conventional Alkaline Reduction Method*
10 % vat dye paste
12 % glycerine
10 % potassium carbonate
10.5% sodium sulfoxylate formaldehyde
57.5% starch-British gum thickener
100 %

All four formulations were printed on chlorinated unbleached wool challis, chlorinated cashmere and chlorinated acid - colloid - resin - treated challis. Samples were dried, then neutral-aged for 7½ and 15 minutes, oxidized with acidified peroxide, followed by neutral hot soaping, rinsing and drying.

I) Three "fiber-reactive dyes" (*14*) (a new class of dyes) were printed by the following formulation:

2½% "fiber-reactive dyes"
5 % urea
27½% water
65 % sodium alginate thickener soln (4%)
0.04% bicarbonate of soda

The prints were dried, neutral-aged for 10 minutes, cold-water-rinsed, neutral-soaped at 120° F, rinsed and dried.

TESTING AND EVALUATION OF LABORATORY PRINTS ON WOOL

——The testing procedures employed were as follows:

Colorfastness to mill washing	AATCC	1-52
Colorfastness to perspiration	AATCC	72-52
Colorfastness to drycleaning	AATCC	25-52
Colorfastness to light	AATCC	16A-54

Tests for tensile strength, dry and wet, were included.

The evaluation of the various classes of dyes and of the various pretreatments was as follows:

Direct dyes, premetallized acid dyes, and premetallized neutral dyes showed poor fastness properties.

Vat dyes printed by the thiourea dioxide process showed poor color yield.

Vat dyes printed by the buffered alkaline reduction method showed poor color yield.

Vat dyes printed by the conventional alkaline reduction method showed good color yield but considerable degradation of the wool (loss in tensile strength from 30 to 50%).

Vat dyes printed by the neutral reduction method showed fair to good color yield and fastness.

Insoluble azo dyes, leuco vat esters, and "fiber-reactive dyes" showed no loss in strength and good color yield.

White discharge with sodium formaldehyde sulfoxylate showed only a fair discharge, and the wool was degraded.

Discharge with thiourea dioxide showed only a fair discharge.

The acid-colloid-resin-treated samples were 30% lower in tensile strength than the other samples before printing. The wool fabric was brittle and harsh, and the color yield was rather poor.

A formaldehyde pretreatment did not noticeably diminish the degradation of the fiber resulting from alkaline reduced vat prints.

The Caro's acid treatment of wool was considered best for its whiter appearance and easier handling as a continuous method of pretreatment.

Equivalent results in color yield and strength were obtained on Caro's acid treatment of wool and on the sulfuric acid-sodium hypochlorite treatment. The hydrochloric acid-sodium hypochlorite treatment produced inferior color yield.

PLANT PRINTING TRIALS

——The trials were made on an all-wool worsted challis. This was used because of its similar construction to the 80-square cotton fabric generally used in roller printing. Other constructions such as tropical and gabardine were treated along with the challis to see the effect of roller printing on these fabrics.

The fabrics were wet out for 20 minutes at boiling temperature to set the fabric and to prevent cockles, scoured for 30 minutes at 100° F, rinsed for 60 minutes at 90°-100° F and dried. Then the fabrics were treated with Caro's acid, rinsed and neutralized with tetrasodium pyrophosphate and dried.

The final pH on the wool fabrics was as follows:

Challis ..... pH 8.43
Tropical ..... pH 8.68
Gabardine ..... pH 8.82

No alterations from conventional 80-square cotton printing practices were made for the machine trials. Engraving, doctoring, lapping, wash blanket and drying were unaltered from cotton procedure.

Trial A was printed in a five-color pattern with one insoluble azo peg, three leuco-vat-ester pegs and an insoluble azo blotch.

The insoluble azos were formulated as follows:

1) Red peg
8 oz Red G (Pr 168)
½ oz caustic soda 72° Tw
8 parts sodium alginate 4%
1 part modified starch
1 gal

2) Brown blotch
4 oz Brown IB (Pr 343)
1 oz caustic soda 72° Tw
8 parts sodium alginate 4%
1 part modified starch
1 gal

The leuco vat esters were formulated as follows:

3) Blue peg
- 3 oz Blue IBC (*CI* 1113)
- 5 oz urea
- 1½ oz sodium chlorate
- 4 oz ammonium sulfocyanide 1:1
- 1¼ oz ammonium vanadate 1:100
- 8 parts sodium alginate 4%
- 1 part modified starch

1 gal

4) Green peg
- 3 oz Green IBA (*CI* 1101)
- Balance as above

1 gal

5) Violet peg
- 3 oz Red Violet IRRN (Pr 503)
- Balance as above

1 gal

Prints were dried, acid-aged 10 minutes, developed 6 seconds through 2° Tw sulfuric acid at 145° F, rinsed, soaped with neutral detergent at 145° F, rinsed and loop-dried.

Trial B was printed in a five-color pattern with vat dyes by the neutral reduction method formulated as follows:

1) Yellow peg
- 8 oz Anthraquinone Vat Yellow GK (*CI* 1132)
- 4 oz thiodiethylene glycol
- 4 oz diethylene glycol
- 2 lbs zinc sulfoxylate formaldehyde
- gum tragacanth thickener

1 gal

2) Blue peg
- 13 oz Indigoid Vat Blue 4B (*CI* 1184)
- Balance as above

1 gal

3) Pink peg
- 13 oz Indigoid Vat Pink FF (Pr 109)
- Balance as above

1 gal

4) Green peg
- 6 oz Anthraquinone Vat Jade Green (*CI* 1101)
- Balance as above

1 gal

5) Brown blotch
- 6 oz Indigoid Vat Brown G (Pr 121)
- Balance as above

1 gal

Prints were dried, neutral-aged 7 minutes, developed at 120° F with peroxide acidified with acetic acid, rinsed, soaped at 180° F with a neutral detergent, rinsed and loop-dried.

Trial C was printed in a five-color pattern with "fiber-reactive dyes" (*14*) formulated as follows:

1) Red peg
- 2 oz red
- 14 oz urea
- sodium alginate thickener
- 0.3 oz sodium bicarbonate added before printing

1 gal

2) Blue peg
- 2 oz blue
- Balance as above

1 gal

3) Violet peg
- 1 oz blue
- 1 oz red
- Balance as above

1 gal

4) Chartreuse peg
- 2 oz yellow
- 0.2 oz blue
- Balance as above

1 gal

5) Brown blotch
- 0.2 oz blue
- 0.4 oz red
- 0.6 oz yellow
- Balance as above

1 gal

Prints were dried, neutral-aged 7 minutes, rinsed with cold water, soaped at 120° F with neutral detergent, rinsed, and loop dried.

Trial D. The following oil-in-water-system pigment colors were printed:

Printing Extender
- 15% methylcellulose 4% *(13)*
- 1% nonionic emulsifier
- 1% oil-soluble resin
- 40% water
- 43% mineral spirits

100%

1) Blue peg
- 85 parts printing extender
- 15 parts synthetic latex
- 10 parts Pigment Blue (RB 20)

2) Green peg
- 85 parts printing extender
- 15 parts synthetic latex
- 6 parts Pigment Green (RB 40)

3) Red peg
- 85 parts printing extender
- 15 parts synthetic latex
- 6 parts Pigment Red (RB 60)

4) Brown blotch
- 85 parts printing extender
- 15 parts synthetic latex
- 4 parts Pigment Red (RB 60)
- 2 parts Pigment Yellow (RB 90)
- 1 part Pigment Blue (RB 20)

Printed, dried and cured for 4 minutes at 280° F, neutral-soaped with 0.05% nonionic detergent in the open soaper at 120° F, rinsed and loop-dried.

Trial E. The Caro's acid pretreated, but not neutralized, wool challis was wet out and dyed with:
- 2% Premetallized Acid Yellow (Pr 330)
- 1.75% Premetallized Acid Bordeaux (Pr 507)
- 0.68% Premetallized Acid Blue (Pr 144)
- 8% Glauber's salt
- 3% sulfuric acid

neutralized after dyeing with:

3% ammonium hydroxide (on weight of fabric) for 15 minutes at 110° F.

The discharge print was made with the following oil-in-water emulsions:

Discharge Extender (12)
- 58.4% water
- 4.9% modified vegetable gum
- 36.7% mineral spirits

White Discharge
- 40% Pigment White (RB 81)
- 10% discharge extender (above)
- 20% water
- 30% zinc sulfoxylate formaldehyde

Colored Discharge
- a) Pigment Blue (RB 20)
- b) Pigment Green (RB 40)
- c) Pigment Yellow (RB 90)
- 10% above pigment color
- 15% butylated melamine-formaldehyde
- 25% discharge extender (above)
- 20% Pigment White (RB 81)
- 30% zinc sulfoxylate formaldehyde

Printed on the dyed challis, dried and neutral-aged for 10 minutes followed by curing at 280° F for 4 min-

utes; soaped with 0.05% nonionic detergent at 120° F, rinsed and loop-dried.

All printed samples were treated after loop drying in the following manner:

Steamed on a short clip-frame, and semidecated with two minutes of steam and two minutes of vacuum.

TESTING PROCEDURES AND EVALUATIONS——All of the final printed wool fabrics were tested for fastness by the following AATCC methods:

16A-54 Colorfastness to Light (5, 10, 20 and 40 hours)
36-54 Colorfastness to Laundering (II and III)
8-52 Colorfastness to Crocking
25-52 Colorfastness to Drycleaning
25-52 Colorfastness to Drycleaning, Wet Test
71-52 Colorfastness to Perspiration
5-52 Colorfastness to Heat (Hot Pressing)

Dry and wet tensile strength tests were made before and after printing.

The tests were evaluated for each class of dye as follows:

1) *Insoluble Azo Dyes and Leuco-Vat-Esters*

Prints on challis, tropical and gabardine fabrics exhibited good fastness properties with the exception of insoluble Azo Brown (Pr 343), which lost depth of shade in laundering.

2) *Vat Dyes printed by the Neutral Reduction Process*

Prints on challis, tropical and gabardine fabrics exhibited poor fastness to crocking and fair fastness to laundering and drycleaning. All other properties were good.

3) *"Fiber-Reactive Dyes"*

Prints on challis, tropical and gabardine fabrics exhibited excellent colorfastness to all tests.

4) *Pigment Colors*

Prints on challis, tropical and gabardine fabrics exhibited fair fastness to crocking, laundering and drycleaning. All other properties were good with the exception of lightfastness of Pigment Yellow (RB 90).

5) White and colored discharges with pigment colors printed on challis fabric exhibited good fastness to light and fair fastness to all other tests.

Tensile Strength	Average Loss in Tensile Strength
Challis	
Insoluble azo dyes and leuco-vat-esters	None
Vat dyes	23%
"Fiber-reactive dyes"	14%
Pigment colors	12.5%
White and colored discharges with pigment colors	13.5%
Tropical	
Insoluble azo dyes and Leuco-vat-esters	2%
Vat dyes	25%
"Fiber-reactive dyes"	12%
Pigment colors	11.5%
Gabardine	
Insoluble azo dyes and leuco-vat-esters	None
Vat Dyes	33%
"Fiber-Reactive Dyes"	7%
Pigment Colors	4%

DISCUSSION OF RESULTS

Different methods of chlorination or oxidation markedly influenced color yield and to some extent fastness properties of dyes printed on wool fabrics. The inclusion of a sulfate radical in the initial phase of some of the shrink-resistant treatments produced stronger prints tinctorially.

Since the Caro's acid used in the standard pretreatments produces a degree of shrink-resistance on wool fabrics, as well as greatly increased tinctorial value, printed fabrics processed in this manner should create a new market.

The wet fastness of acid and basic dyes appeared to be improved by a treatment with a silicone-type water repellent, but the fastness to light was not improved.

With the direct dyes, the premetallized neutral dyes, and the premetallized acid dyes, only fair to poor fastness properties were observed. Of the dyes printed in the laboratory trials, the brighter shades had the poorest fastness.

The vat dyes printed by the neutral reduction process did produce to some extent good color yield with fair to good general fastness properties. The fixation efficiency can only be considered fair when the alkali degradation of the wool is minimized.

The insoluble azo dyes and the leuco-vat-esters (soluble vat dyes) may be printed together in the same pattern, as well as separately, thus giving a full shade range. The ease of application, brightness and generally good fastness properties makes these two groups very attractive for practical printing.

The recently introduced "fiber-reactive dyes" were roller-printed on wool for the first time in this country, specifically for this paper. The general fastness of this group of dyes is excellent. Preparation and fixation were the easiest of all dyes evaluated. While at present the range of dyes is limited, the available dyes are bright and blend well to give a wide range of shades.

A steaming or aging for a period of 10-12 minutes appeared to be sufficient to fix adequately all the classes of dyes discussed in this paper.

The prints with pigment colors showed fair to good general fastness properties and a wide range of bright shades, and were easy to apply.

The white discharge on grounds dyed with premetallized dyes can only be considered fair because of the characteristics of these dyes and the yellowish cast of the base wool fabric. Colored discharges with pigment dyes on dyed grounds exhibited fair general fastness properties on the printed portions. They were limited in brightness and fixation by the difficulty of completely discharging the dyed ground.

CONCLUSIONS

This investigation has shown that practical roller printing of fast dyes on wool piece goods can be accomplished by using conventional cotton equipment. This meets the demands of fashion and opens a new field for styling of wool fabrics and garments.

The pretreatment of wool fabrics with Caro's acid produces particularly bright shades, due to the whiter ground, and good color yield with most classes of dyes. Equally good color yield is obtained by pretreatment with sulfuric acid chlorination.

Neutralization to pH 8 of any of the pretreatments before printing improves the color yield of the prints.

The dyes which produce a wide range of bright shades and good to excellent fastness properties are

"fiber-reactive dyes"
insoluble azo dyes
leuco-vat-esters.

Vat dyes exhibit only fair fastness properties and cause considerable losses in tensile strength.

Prints with pigment dyes show good tinctorial strength but have only fair fastness properties.

REFERENCES

(1) Wood, P J, *Am Dyestuff Reptr* 17, 87 (1928).
(2) Knecht, E and Fothergill, J B, 3rd Edition, Griffin, 1936.
(3 Farrington, F, *J Soc Dyers Col* 64, 269 (1948).
(4) Potter, J A, *ibid* 71, 645 (1955).
(5) Moncrieff, R W, "Wool Shrinkage and Its Prevention." Chem Publishing Co, 226 (1954).
(6) Speakman, J B, Nilssen, B and Elliot, G H, *Nature* 142, 1035, (1938).
(7) Trotman, S R, *J Soc Chem Ind* 41, 219T (1922).
(8) "Notes on Chlorination of Woolen Goods," *Textile Mfr* 150, 148 (1953).
(9) Sanforlan SW (Cluett, Peabody & Co., Inc) (pat applied for).
(10) Sanforlan FC (Cluett, Peabody & Co., Inc) (pat applied for).
(11) Krug, P *J Soc Dyers Col* 69, 606 (1953).
(12) Sherwin-Williams Co (private communication).
(13) Interchemical Corp (private communication).
(14) Procion Dyes (ICI) from Arnold, Hoffman & Co, Inc.

1956 Intersectional Contest———

SMOG STUDIES: ITS EFFECT ON DYES AND FIBERS—PART I*

PACIFIC SOUTHWEST SECTION

COMMITTEE
THOMAS P LEE, *chairman*
Geigy Chemical Corp
STEVE BURMER
U S Testing Co, Inc
RITA LANDRY
UCLA
PAUL NOONAN
National Dyeing & Finishing Co
FRED WIGGLESWORTH
United Piece Dye Works

This paper presents introductory data on the effect of smog in the Los Angeles area on a variety of dyed textile materials. Physical, chemical and geographical factors involving smog conditions are described.

The testing program consisted of exposure under smog conditions of dyed woven and knitted fabrics, and rubberized and elastic fabrics, as outlined below:

a) Acetate rayon—disperse dyestuffs
b) Viscose rayon—directs and vat dyestuffs
c) Nylon—acid, metalized and disperse dyestuffs
d) Wool—acid, metalized and specialty dyestuffs
e) Orlon—basic and disperse dyestuffs
f) Cotton—direct, vat and sulfur dyestuffs

The above prepared test fabrics were exposed and tests made before and after exposure. Testing comprised gas fading, tensile strength, pick count and outdoor aging. Equipment, such as a gas chamber, Scott tester, exposure box (outdoor type) and an artificial smog chamber, was available.

Literature and references are supplied from such sources as Stanford Research Institute Bulletins and the Air Pollution Foundation.

INTRODUCTION

AIR pollution is the problem resulting from the growth of population and industry. The pollution acquires obnoxious characteristics called "smog" in proportion to confinements by low temperature inversion, lack of wind, and exposure to sunlight. Smog is characterized by eye irritation, reduced visibility, odor, high oxidant value and plant damage *(1)*. Although air pollution is a worldwide problem *(2, 3, 4, 5, 6)*, the air pollutants as set forth in this paper apply to the conditions reported in the County of Los Angeles, California.

The complete chemical nature of smog is not known. The primary components that have been identified *(1)* are: hydrocarbons, nitrogen dioxide, sulfur dioxide, aldehydes, organic acids, and aerosols. Smog of the Los Angeles type is spreading to all the major metropolitan centers of the world *(8)*. However, due to the topographical formation and climate of the Los Angeles basin, smog finds its optimum conditions in this region. (See Figures 1a and 1b.)

The effect of air pollution on health, vegetation, and structures has received considerable attention *(9)*. Investigations pertaining to the degradation of materials on outdoor exposure due to this weathering factor, however, have been directed primarily to rubber *(10, 11)*. Extensive research *(12, 13, 14, 15, 16, 17)* indicates the importance ascribed by investigators to the degradative affect of ozone. Work at the Naval Clothing Depots in Brooklyn, New York and Clearfield, Utah on the aging of fabrics shows that, of all the weathering factors, sunlight and intense atmospheric pollution are the most potent in effect *(18)*. The importance of sunlight in causing deterioration of exposed samples is well known and has been the subject of much investigations *(19)*. The proven activity of ozone in causing damage and the ability of light to produce ozone *(20)* have led some to credit photochemical degradation to ozone *(21, 22)*. Dorée and coworkers studied the oxidation of cellulose by ozone and reported the formation of oxycelluloses of high reducing power *(23, 24, 25)*. Goldberg *(26)* mentions the research study by Celanese scientists on ozone fading of acetate drapery fabrics dyed with "gas-fast" blue dyestuffs.

The Pacific Southwest Section Research Committee presents this paper as a preliminary investigation to determine the extent that smog conditions may affect textiles, relative to dyestuffs and fiber deterioration. The selection of this topic was prompted by an increasing number of inquiries made by public and private groups.

EXPERIMENTAL

MATERIALS———The fibers and dyestuffs investigated in this study are listed in Table I. The selection of dyestuffs and fibers was based on a twofold purpose: 1) to record color change of dyestuffs which exhibit varying degrees of sensitivity to atmospheric gases, and 2) to determine the physical deterioration of fibers when exposed to smog conditions.

PROCEDURE———In order to determine the degree of color change and the extent of fiber damage, the Committee exposed fabrics with selected dyes to outdoor smog conditions. The outdoor exposure stations were located at two sites, Station No. 1 and Station No. 2.

Station No. 1, considered a "heavy" smog area, is situated in the central Los Angeles basin. It is generally surrounded by industry and is approximately one mile from a freeway.

Station No. 2, considered a "light" smog area, is in West Los Angeles.

The stations were located on the roofs of the respective buildings and consisted of two exposure chambers for each location. (See Figure 2.) The chambers were 36 x 25 x 24 inches in size with hinged sides opening from the bottom and a removable top to permit easy sampling. When closed, the containers were thoroughly sealed, and so constructed that in the "open" position no sunlight was acessible to any of the test samples. The 4″ x 18″ strips were suspended on wooden

TABLE I
Fibers and Dyestuffs Investigated

Specimen no.	Fabric description	Dyestuff
1	acetate—light blue knit	acetate
2	viscose—dark blue	direct
3	viscose—aqua	vat
4	nylon—light blue knit	acetate
5	nylon—red, knit	acid
6	cotton—aqua	direct
7	cotton—dark green	vat
8	Orlon—red	basic
9	Orlon—aqua	acetate
10	acetate/viscose(50/50)—blue	acetate
11	wool—rose	metalized
12	wool—red	acid
13	wool—green	premetalized
14	rubberized—blue	acetate
15	rubberized—green	acetate
16	rubberized—white	acetate
17	AATCC Gas Fading Standards	acetate

* Presented by Rita Landry on September 15, 1956 at the Waldorf-Astoria, New York, NY, during the Perkin Centennial.

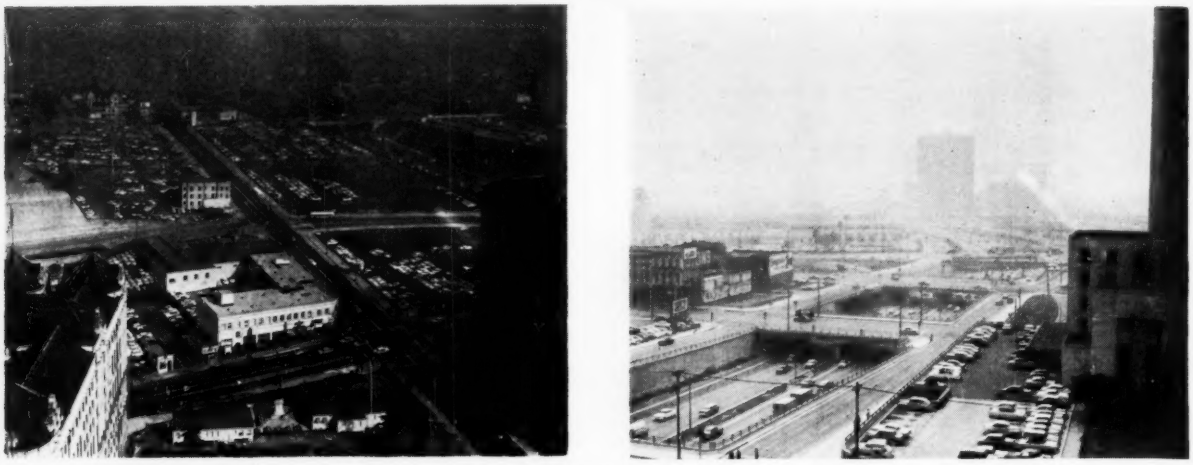
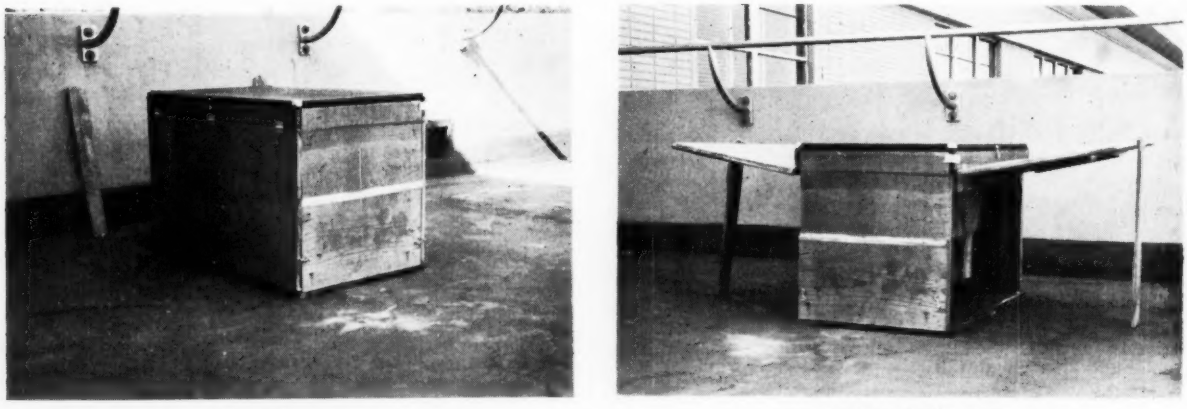


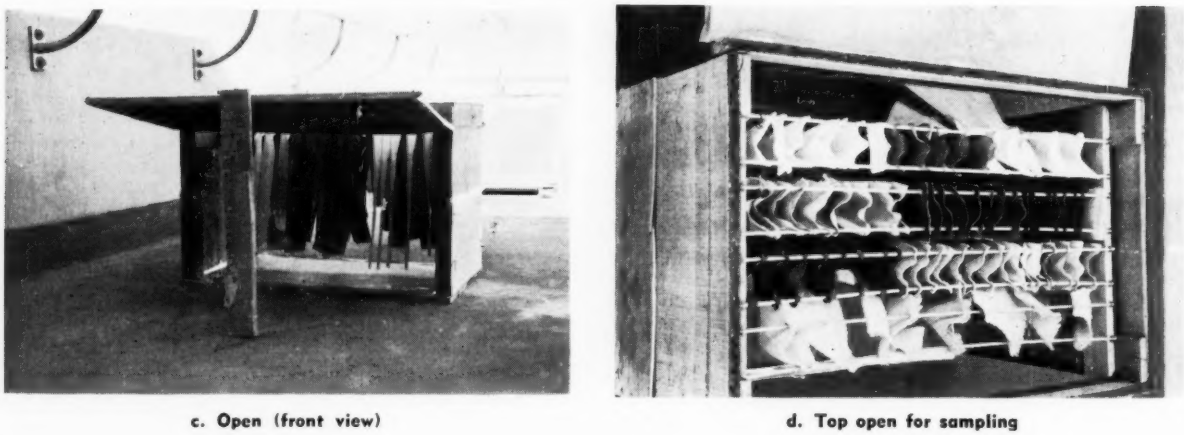
Figure 1
Photos showing reduced visibility, one of the characteristics of smog.

dowels and hung to permit adequate circulation of air. One chamber at each station was operated only on smog days, the other only on no smog days. The control for smog or no smog days was based on a daily contact at 8:45 AM with the Air Pollution Control District to obtain the daily forecast. Samples in the appropriate chamber were then exposed at each outdoor station from 9 AM to 5 PM. (See Tables II and III.)



a. Closed

b. Open (side view)



c. Open (front view)

d. Top open for sampling

Figure 2
Four views of the outdoor exposure chamber

TABLE II[a]

Daily and average maximum contaminants[b]

Date	CO (ppm) #1	CO (ppm) #2	Km (units ×10) #1	NO_2 (pphm) #1	Oxidant[c] (pphm) #1	Oxidant[c] (pphm) #2	Ozone[d] (pphm)	SO_2 (pphm) #1
NO SMOG FORECAST DAYS (JUNE, 1956)								
6/6	(8)	12	53	87	(15)	10	—	9
6/14	7	10	37	9	15	(6)	—	5
6/15	8	(11)	69	19	8	—	—	(5)
6/18	(13)	12	42	16	(20)	(4)	—	3
6/19	(14)	11	31	16	17	5	—	7
6/20	(13)	(10)	39	24	(14)	(3)	—	(5)
6/21	(14)	10	48	24	(13)	8	—	2
6/22	(15)	9	36	95	(16)	12	—	(5)
6/25	(16)	9	65	61	26	18	—	(8)
Avg	12	10	47	39	16	8	—	5
SMOG FORECAST DAYS (JUNE, 1956)								
6/7	9	8	60	54	18	17	21	1
6/8	11	11	76	40	26	24	25	(15)
6/11	(18)	(17)	130	32	40	(37)	12	(8)
6/12	(12)	15	96	37	34	(26)	24	(6)
6/13	6	16	88	44	(6)	24	32	(7)
6/26	(21)	10	98	45	32	16	45	5
6/27	(29)	14	108	48	40	23	45	(8)
6/28	(19)	13	66	40	11	8	15	5
6/29	(21)	(14)	84	45	12	15	15	4
Avg	16	13	90	43	24	21	26	7

[a]Air Pollution Control District—County of Los Angeles. Monthly report on Meteorological Data for June, 1956.
[b]Values in parentheses are the maxima for days on which the hourly data were incomplete.
[c]Total oxidant as measured by iodine release from buffered potassium iodide solution.
[d]Ozone sampling is manual, by rubber cracking only.
#1—Station No. 1, Central Los Angeles.
#2—Station No. 2, West Los Angeles.

TABLE III

Summary of maximum concentrations of air contaminants for June, 1956

Station	CO_2 (ppm)	Km (units ×10)	NO_2 (pphm)	Oxidant (pphm)	Ozone (pphm)	SO_2 (pphm)
1	29	130	95	40	45	80
2	17	—	—	37	9*	—

*One-day maximum.
—data not recorded.

TABLE IV

Visual color evaluation[a, b]

EXPOSURE CONDITIONS

Specimen	SMOG FORECAST DAYS 72 Hours Station 1	72 Hours Station 2	112 Hours Station 1	112 Hours Station 2	152 Hours Station 1	152 Hours Station 2	NO-SMOG FORECAST DAYS 72 Hours Station 1	72 Hours Station 2	112 Hours Station 1	112 Hours Station 2	152 Hours Station 1	152 Hours Station 2
1	30D	15NC	15D	15D	20D	15D	NC	NC	5D	5R	10D	5D
2	NC	NC	NC	NC	10RD	NC	NC	NC	NC	NC	NC	NC
3	NC/D	NC/D	NC/D	NC/D	NC/D	NC/D	NC	NC	NC	NC	NC	NC
4	20D	10D	20D	10NC	20D	10NC	NC	NC	NC	NC	NC	NC
5	10BR	NC	10BR	10D	15BD	10D	NC	NC	NC	NC	NC	NC
6	5D	NC	5B	NC	5BD	NC	NC	NC	NC	NC	NC	NC
7	NC	NC	5NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
8	5NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
9	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
10	5R	NC	10R	NC	10R	NC	NC	NC	NC	NC	NC	NC
11	5Y	NC	10Y	NC	10Y	NC	NC	NC	NC	NC	5D	NC
12	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
13	10B	5D	10BD	NC	10BD	NC	NC	NC	5D	NC	10D	NC
14	15B	5B	20BD	10BD	30B	25D	5B	NC	10B	5B	20B	10B
15	15D	5D	20D	10D	30D	25D	5D	NC	10D	5D	20D	10D
16	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
17	15RD	5D	15RD	5D	20R	10R	10R	5NC	10RD	5R	20R	10R

[a]Data is based on average visual observations of three experienced color matchers.
[b]Results are expressed in terms of shade loss and shade change.
B—Blue, O—Orange, Y—Yellow, R—Red, V—Violet, D—duller.
NC—No Change.
Ex: 10BR = 10%, shade loss: BR, shade change, Bluish-Red.

COLOR CHANGE EVALUATION ——— Samples were exposed in a standard atmospheric gas test chamber as outlined in the AATCC Year Book *(27)*. This was done as a general indication of color change to be anticipated from the outdoor exposures. Evaluations of color change between smog and no-smog outdoor exposures, and stations 1 and 2 were made by visual comparisons and by photovolt readings. The visual observations were conducted by three experienced color matchers in the dyestuff and finishing industries. (See Table IV.) Color changes by photovolt studies will be included in the subsequent report when sufficient data is available.

FIBER DETERIORATION EVALUATION———A basic indication of physical damage is the loss in strength of fibers. In this preliminary investigation, therefore, fiber deterioration was determined by strength tests. These tests were made in accordance with the procedures outlined in the ASTM D-13 manual, using one-inch ravel strips on woven goods and bursting strengths on knit fabrics.

The results were inconclusive, probably due to the fact that the samples did not have sufficient exposure to smog conditions. The exposure time to date is 152 hours. The most significant change was observed in specimen number 4. Outdoor exposures begun at the start of the so-called "smog season" will be continued and are expected to show appreciable changes in tensile strength.

ARTIFICIAL SMOG CHAMBER ———In an effort to obtain accelerated deterioration effects, the Committee subjected the test materials to a controlled atmosphere in an artificial smog chamber (see Figures 3, 4 and 5.) The average oxidant value was 1.420 ppm as determined by the KI method. Temperature and relative humidity conditions were maintained at 70° ± 2° F and 30% RH. The 4″ x 18″ specimens were suspended in such a manner to permit adequate circulation of atmospheric gases.

The data showing results obtained by artificial smog exposures will be included in the next paper when more information on this study is available.

SUMMARY

A total of 17 dyed textile fabrics were subjected to outdoor atmospheric conditions on smog and no-smog forecast days. The samples were examined for color change in the

Figure 3

Artificial smog chamber—open chamber showing the light source, the animstat in the ceiling for air circulation, and the temperature and humidity controls on the back wall.

Figure 4

Artificial smog chamber—door open on one of the two chambers with some cages seen through the open door and window.

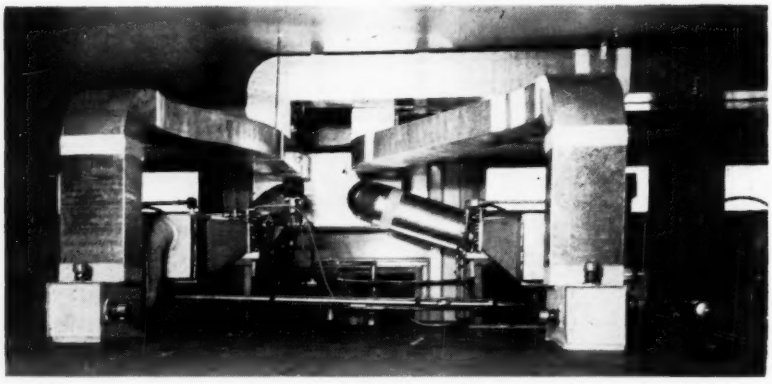


Figure 5

Artificial smog chamber—showing the ducting for the intake and exhausting of air with attached compressors and cooling coils for air conditioning and humidification.

standard AATCC gas-fading chamber to give a general indication of dye fastness. Test strips 4″ x 18″ were exposed at two sites, Station No. 1 located in a heavy smog area, and Station No. 2, in a light smog area. Each station consisted of two chambers, one opened on smog days, the other on no-smog days.

Color evaluations made after 72-hour, 112-hour, and 152-hour exposures showed a general and gradual color loss with increased exposure time and/or greater atmospheric pollution on samples by visual observations and photovolt readings. Samples 9, 12, and 16 exhibited no color loss or color change.

Insufficient hours of exposure make evaluation of fiber deterioration impossible at the present time. As anticipated, a greater number of hours will be necessary in order to correlate results between stations number 1 and 2 under smog and no smog conditions.

FUTURE WORK

This report is a preliminary study into the effect of smog on dyestuffs and fibers. Outdoor exposures are being continued to investigate fiber strength deterioration and thus permit conclusive evaluation of results. Investigations into degradation by means of an artificial smog chamber will be continued. Future plans will include exposures under controlled temperature and humidity conditions. A study will also be made concerning the degradative effect of the various air pollutants.

ACKNOWLEDGEMENTS

The authors wish to express their thanks to Paul Kotin, associate professor of pathology at the University of Southern California, School of Medicine for providing the artificial smog chamber; to Robert L Chass, chief, Evaluation and Planning Staff, Air Pollution Control District for the data on air pollutants; to R A Fliegel, Chairman of the Pacific Southwest Section, for his co-operation; to E Lindquist, Geigy Dyestuffs, Division of Geigy Chemical Corp, D M Burko, United States Testing Company, Inc, C R Tagliabue, United Piece Dye Works, and R Coleman, National Dyeing and Finishing Company for furnishing facilities and material; to F Ahl of E I du Pont de Nemours & Co, Inc, for his assistance; and to Mike Davis and Don Ramos for their help in operating the outdoor exposure boxes.

LITERATURE CITED

(1) First Technical Progress Report, Air Pollution Foundation, L A, 1, 4 (1955).
(2) "Air Pollution in Australia", *Publ Hlth Engng Abst* **35**, 1 (1955).
(3) Halliday, E C, "Level of Atmospheric Pollution in South African Cities and its Measurement", *S A Counc Sci Ind Research* (1955).
(4) ter Linden, A J, "Experience with Air Pollution in Holland", *Am Soc Mech Engr*, Paper 55—APC—7 (1955).
(5) Pancehri, G, "Collective Intoxication in Italy due to Atmospheric Pollution", *ibid*, Paper 55—APC—16 (1955).
(6) Beaver, H, "Control of Air Pollution in Great Britain", *Eng J* **38**, 929-32 (1955).
(7) "Smog and Its Effects", Smog Brief No. 3, Air Pollution Control District, Los Angeles, Calif.
(8) "Air Pollution: Its International", *Chem Eng News* **33**, No. 18 1850-1 (1955).
(9) Davenport, S J and Morgis, G G, "Air Pollution—A Bibliography", Bur Mines Bull 537, 101-65 (1954).
(10) Crabtree, J and Kemp, A R, *Ind Eng Chem* **38**, 278 (1946).
(11) Newton R G, *Rubber Chem Tech* **18**, 504 (1945).
(12) Milnes, D J, "Artificial Weathering of Rubber", *Rubber Age* **76**, No. 6, 875-8 (1955).
(13) Buist, J M, "Aging and Weathering of Rubber", *Rev gin Caoutchour* **31**, 479-90 (1954).
(14) Delman, A D, Simms, B B and Allison, A R, "Evaluation of Chemical Protectants as Inhibitors of Ozone-Induced Degradation of G R S", *Anal Chem* **26**, No. 10, 1589-92 (1954).
(15) Creed, K E, Hill R B and Breed, J W, "Evaluation of Ozone Protective Agents for Elastomers", *ibid* **25**, No. 3, 241-4 (1953).
(16) Smith, D M and Gough, V E, "Ozone Cracking: Cinematographic Study", *Inst Rubber Ind* **29**, No. 5, T219-37 (1953).
(17) "Accelerated Ozone Cracking of Vulcanized Rubber", ASTM D 1149—51T.
(18) Maas, J, "Accelerated Aging of Fabric: Effects of Elimination of Sunshine on Weather-Exposed Fabric and Subsequent Deterioration in Storage", *Am Dyestuff Reptr* **39**, No. 21, P693-8; 714 (1950).
(19) Appleby, D K, "The Action of Light on Textile Materials—A Review of the Literature", *ibid* **38**, No. 4, 149-56; 189 (1949).
(20) Haagen-Smit, A J, Bradley, C C and Tax, M M, "Ozone Formation in Photochemical Oxidation of Organic Substances", *Ind Eng Chem* **45**, No. 9, 2086-9 (1953).
(21) Anon, "Deterioration of Fabrics by Light", Dept Sci Ind Research, 1st Rpt Fabrics Coordination Research Comm 10—13 (1925).
(22) Jones, J I M, "Tendering and Fading of Cellulose Materials on Exposure", *J Soc Dyers Col* **52**, 285-99 (1936).
(23) Cunningham, M and Dorée, C J, *J Chem Soc* **101**, 497 (1912).
(24) Dorée, C J, *ibid* **103**, 1347 (1913).
(25) Dorée, C J and Healey, A C, *J Text Inst* **29**, T27 (1938).
(26) Goldberg, J B, "Textile Research Achievements in 1955", *Modern Textiles* **37**, No. 2, 77 (1956).
(27) "Colorfastness of Dyed Cellulose Acetate to Atmospheric Oxides of Nitrogen", Tentative Test Method 23-54, *AATCC Tech Man Year Book* **31**, 67-9 (1955).

EULOGY ON LOUIS ATWELL OLNEY*

RAYMOND W JACOBY
President, AATCC

On September 27 1956, the Lowell Technological Institute held a special convocation in observance of the Perkin Centennial and dedication of Olney Hall, the Institute's new paper and leather engineering building.

Christian A Herter, governor of the Commonwealth of Massachusetts, dedicated the building in memory of Dr Louis A Olney, founder of the AATCC and 47 years head of LTI's chemistry department.

Raymond W Jacoby, president of AATCC, delivered the eulogy on Dr Olney, the text of which appears here in full.

THE dedication of Olney Hall is another enduring tribute to a great man. It is a privilege, as president of the American Association of Textile Chemists and Colorists, to join in honoring Louis Atwell Olney.

Born in Providence, Rhode Island, April 21, 1874, he received his early education in that city, after which he entered Lehigh University where he received his Bachelor of Science degree in Chemistry in 1896, his Master of Science in 1908 and was honored with a Doctor of Science degree in 1926. After serving as an instructor in chemistry at Brown University for a year he joined the faculty of the then Lowell Textile School. He served there as professor of chemistry and dyeing and director of that department for 47 years, until his retirement in 1944, at which time he was named professor emeritus. He passed away on February 11, 1949.

This sounds like a simple biography, but to recount all of the activities, all of the achievements, all of the fields into which his influence spread during those years would fill endless pages. He served in countless ways as an educator, scientist, business executive, banker, author, churchman, consultant, historian and humanitarian. His genius, untiring energy, great dignity and capacity for leadership enabled him to be a vital and inspiring influence in the industrial, professional, civic and religious worlds.

With such a widespread diversity of interests, one wonders how he was able to devote so much of his time, energy and ability to the textile industry. Why he did so we can only surmise. It may be that in this one of the three requisites for human survival—food, clothing and shelter—he saw a real opportunity for service. Perhaps he had the foresight to realize that here was a field where vision, effort, determination and compassion were needed. However, as to what lead to the decision we can borrow those famous words—"Ours not to reason why"—and be very grateful that he made the choice that he did.

To have been a guiding influence to a legion of students during their formative years was an achievement in itself, but as his sphere of activity broadened his influence spread to people of all ages.

To list his contributions to progress in the order of their magnitude would be impossible. There were many that were great. Our judgment of their relative value would depend upon our familiarity with them. There are over seven thousand members of the American Association of Textile Chemists and Colorists to whom his being its founder was one of his greatest services and gives him an enduring place of eminence in the professional world.

All that I have said about Louis Atwell Olney is a matter of record. His many achievements can be cited with sincerity, authenticity and pride in this great man. In paying tribute to an individual one can speak from the record of things about which he reads, or from his heart about things of which he knows. In doing honor to Louis Atwell Olney it is my privilege to be in the latter class. During my active years in the Association I had many contacts with Dr Olney.

The Association was founded with three objectives: to increase the knowledge of the application of dyes and chemicals to textiles, to encourage research and to establish channels for the interchange of professional knowledge. These may sound commonplace. In the illustrious biography of the one to whom this hall is being dedicated, among his numerous deeds we find the simple statement — "Founder of the AATCC." I wonder how many fully realize the vision and courage which was necessary for that undertaking. I use the word "courage" advisedly.

We hear or read of triumph or tragedy. If it is described eloquently we are apt to think that we fully appreciate the feelings of those whose experience it was. But can we? I doubt it. Similarly I doubt if there are many who can really appreciate the impact of the founding of this Association unless they were engaged in the industry before its existence. I belong to this group and know first hand what the AATCC has done for the hundreds of thousands of people connected with the textile industry; for the millions of users of textiles.

We hear much discussion of the justice or injustice of "guilt by association." In those days there was no question about it. Mere association with persons similarly engaged in other organizations was not only frowned upon but was frequently forbidden. Interchange of professional knowledge was oftentimes outright disloyalty and in some instances was cause for dismissal. In this one act of founding the American Association of Textile Chemists and Colorists Louis Atwell Olney earned an undying debt of gratitude from the entire textile industry.

In the years which lie ahead—long after Olney hall will have disappeared —one name will continue to live on— Louis Atwell Olney.

* Delivered on September 27, 1956 at the Lowell Technological Institute, Lowell, Mass, during a special convocation in observance of The Perkin Centennial and dedication of Olney Hall.

ACTIVITIES OF THE LOCAL SECTIONS

Piedmont

THE Piedmont Section held its Fall Meeting on October 6, 1956 at the Hotel Charlotte, Charlotte, NC, with 165 members and guests in attendance.

The Research Committee met under the direction of L B Arnold, Jr. Some aspects of radio-active materials and their application to the textile industry were discussed.

The afternoon technical session featured talks by Neil H Sherwood, B F Goodrich Research Center, who spoke on "Binders for Nonwoven Fabrics", and L G Lovin, Celanese Corp of America, who spoke on "Technology of Nonwoven Fabrics".

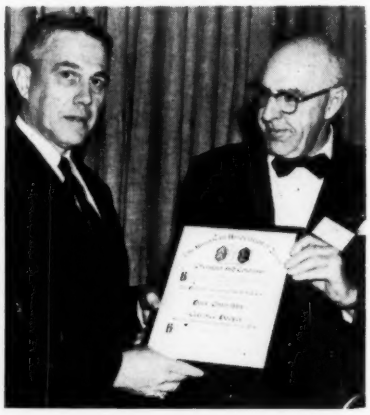
At the evening banquet, Frank J Soday, The Chemstrand Corp, discussed "Developments of Science and Industry in the South".

Walter M Scott, vice president (Southern Region) and candidate for the presidency of AATCC, congratulated the Section on its first-prize-winning paper in the 1956 Intersectional Contest.

As a memento of the twenty-fifth anniversary of his Sectional chairmanship, John L Crist was presented with a silver tray.

Recipients of the Charles H Stone Scholarship were introduced.

The Past Chairman Plaque was presented to retiring chairman Clarence Hooper by A R Thompson, custodian, after which the 1957 officers were installed.



Clarence Hooper (left), retiring chairman of the Piedmont Section, receives Past Chairman's Plaque from A R Thompson, custodian.

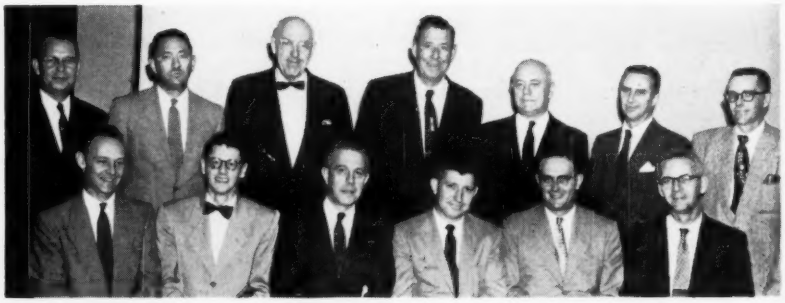
Chairman John L Crist (left) is shown receiving the 25th Anniversary Silver Tray from retiring chairman Clarence Hooper. Mr Crist was chairman of the Piedmont Section in 1931.

NEW OFFICERS AND COMMITEEMEN, PIEDMONT SECTION, 1956-57—*Front row (l to r)*: Clarence Hooper, councilor; Linton C Reynolds, secretary; Clement O Stevenson, chairman; W E Rixon, vice chairman; J C King, treasurer (reelected); Robert L Ward, sectional committeeman; *Back row (l to r)*: Henry A Rutherford, councilor; R Hobart Souther, councilor; Daniel A Torrence, sectional committeeman; A R Thompson, custodian; Paul B Stam, councilor; A Henry Gaede, councilor; M L Slesinger, chairman, Social Committee; L B Arnold, Jr, chairman, Research Committee

Northern New England

COMMITTEE members of the Northern New England Section's Intersectional Contest Committee met recently at Fabric Research Laboratories, Inc, Dedham, Mass to discuss plans for the presentation of a paper during the 1957 Intersectional Contest, to be held next fall in Boston.

Present at the meeting were: Robert D Robinson, Bachman Uxbridge Worsted Co, Inc, *Chairman;* Frank J Rizzo, Quartermaster Research & Development Center, Natick, Mass; Bennett S Gesmer, Dyecraftsmen, Inc; Frederick T Lense, Monsanto Chemical Co; Walter E Flister, Barre Wool Combing Co, Ltd; Robert J Pierent, Lowell Technological Institute; Edward B Bell, Textile Aniline & Chemical Co; Joseph S Panto and Charles A Lermond, Fabric Research Laboratories, Inc.



OUTGOING OFFICERS AND COMMITTEEMEN, PIEDMONT SECTION—*Front Row (l to r)*: Kenneth S Campbell, sectional committeeman; Edward A Murray, sectional committeeman; Clarence Hooper, retiring chairman; Clement O Stevenson, incoming chairman; Warren E Rixon, retiring secretary; J C King, treasurer; *Back row (l to r)*: V B Holland, sectional committeeman; Henry A Rutherford, councilor; A R Thompson, custodian; A Henry Gaede, councilor; Harley Y Jennings, councilor; L B Arnold, Jr, chairman, Research Committee; James Ballock, Jr, sectional committeeman

Rhode Island Section Meeting Photos

(Courtesy of John E Trezise, Karasell Chemical Co)

Philadelphia

THE Philadelphia Section held a dinner meeting November 2, 1956 at the Drake Hotel, Philadelphia, Pa. with Chairman Thomas H Hart presiding.

The program featured a talk by Charles H A Schmitt, Sandoz Chemical Works, Inc. on "Light Fastness Testing with Special Emphasis on Automotive Fabrics" and a showing of Geigy Dyestuffs' film, "Insects Astray".

In attendance at the meeting were Frederick V Traut, vice president of AATCC, and George O Linberg, candidate for president.

The next meeting of the Philadelphia Section will be held December 7 at Kugler's Restaurant, Philadelphia.

The results of the election of officers and councilors for 1957 will be announced.

The technical program will feature a paper by Eugene Allen of the Research Division of the American Cyanamid Company on "Fluorescent White Dyes: How They Work and How They are Evaluated."

Before the meeting, the Section will present the new film of the Chamber of Commerce of the United States on "People, Products and Progress—1975". This film, which depicts our life in the future, is based on carefully calculated studies of leading trade organizations and business firms.

Activities of the Local Sections

New York

THE New York Section met November 16, 1956 at Kohler's Swiss Chalet, Rochelle Park, NJ, with 180 in attendance.

The following were elected to fill three places in New York's seven-man delegation to the Council for the year 1957: Robert L Stutz, Better Fabrics Testing Bureau; Max W Winkler, American Viscose Corp; and Arthur J Kellner, United States Testing Co.

Raymond W Jacoby, president of AATCC, discussed the recent Perkin Centennial celebration and expressed thanks for the effort and cooperation of the New York Section.

Featured speakers of the evening were Warren B Reese, Macbeth Daylighting Corp, on "The Fundamentals of Lighting", and Eugene Allen, American Cyanamid Co, on "Fluorescent White Dyes: How They Work and How They are Evaluated".

Carl H Brubaker, Standard Bleachery & Printing Co, was the winner of the "draw and quiz" contest, which will be a regular feature of New York Section meetings. He was awarded a beautiful piece of glassware.

Snacks and tidbits were served prior to dinner, and coffee was served to members and guests who were not present at the dinner.

Pacific Southwest

1956 FALL OUTING

•

THE INN, RANCHO SANTA FE, CALIF

1—A H Roberts, Jacques Wolf & Co, golf—low net
2—F Thatcher, Modern Dyers, golf chairman, golf—low gross; L Leenertz, Purex, putting
3—A Matterman, Western Carloading
4—J De La Barre, Sandoz
5—Mrs A H Roberts; F Thatcher
6—Mrs S Springer; Mrs R Fliegel; Mrs P Noonan
7—C McCann, Pacific Textile Processing Co
8—S Springer, Springer Co
9—M Behrendt, Catalina Inc, outing chairman
10—Rita Landry, UCLA
11—L Olsen, Jr; L Olsen, Ciba; M Kramer, Hollywood Hand Prints
12—Mrs H Ellsworth
13—Mr & Mrs W Ingham and Mr & Mrs R Sumers, National Aniline
14—H Ellsworth, West Coast Carpet Dyers; E Lindquist, Geigy; R Andersen, Modern Dyers
15—Mrs F Thatcher
16—Mr & Mrs W Campbell, California Hand Prints; Mr & Mrs F Wilhelm, American Aniline
17—Mr & Mrs R Andersen; Mr & Mrs R Fliegel, Allied Printers & Dyers, PSW Section chairman
18—Mr & Mrs H Sprecher, Industrial Textile Co; Dr & Mrs S Dadone, L A Piece Dye Works
19—Mrs J Smith; Mrs R Andersen; Mrs M Behrendt; Mrs W Campbell
20—Mr & Mrs S Milstein, Nylon Spinners; R Mishell, Dyemasters Inc; Mr & Mrs W Kramer, Jenkins, Wright

▶

Warren B Reese, speaker

PHOTOS OF PHILADELPHIA SECTION MEETING AT READING, PA, SEPT 28-29, 1956

(See meeting report on page P842 of the November 5, 1956 issue of American Dyestuff Reporter)

(Additional photos on page P927)

Rev Clarence Rahn, speaker

Head table at dinner meeting

(Courtesy of A H Roberts, M H Behrendt and S Springer)

PHOTOS OF PHILADELPHIA SECTION MEETING AT READING, PA, SEPT 28-29, 1956

(See meeting report on page P842 of the November 5 issue of American Dyestuff Reporter)

(Additional photos on page P926)

Entertainment at dinner by Cook's Band

Visit to the Carpenter Steel Company

Visit to the Sunshine Brewery

Picnic at the estate of C Scott Althouse

News of the Trade

Carbide's West Coast Petrochemicals Plant Operating Full Scale

The Pacific Coast's first petrochemicals plant producing ethylene oxide, ethylene glycol, and polyethylene is now running at full scale according to a recent announcement by D B Benedict, president, Carbide and Carbon Chemicals Company, a Division of Union Carbide and Carbon Corporation.

More than 500 representatives of major Pacific Coast industries that use chemicals and plastics were conducted on a plant tour after being welcomed by Mr Benedict.

The Torrance plant is located on a 140-acre site. Much of the petroleum gas is brought in from the neighboring General Petroleum Company. Production processes at the Torrance plant are largely controlled by automation and continue on stream 24 hours a day. There are 350 employees, all hired locally except for a small management staff. The plant boasts the most modern safety and fire protection devices and intensive safety training programs, continuing inspections of equipment and work areas. Similar measures reportedly have reduced lost time in other Union Carbide chemicals plants to less than 40 percent of that in industry as a whole.

From the time plans for the Torrance plant were drawn, Carbide and Carbon Chemicals Company has followed recommendations made by the Los Angeles Air Pollution Control District in regard to installing devices that dispose of unused gases without polluting the air.

"We have invested $2 million more than would be usually required in equipment to avoid air pollution," Mr Benedict said. The company has received the benefit of the APCD's program, which includes recommendation of design and specifications as well as final inspection of installations.

The superintendent of the new plant, C N Rucker, told the group that construction at Torrance began in June 1953 as part of a major expansion program that has included the building of similar facilities at Seadrift and Texas City, Texas. Carbide's other chemicals plants are located at Whiting, Ind; Institute and South Charleston, W Va; and Niagara Falls, NY.

Mayor Charles P Taft of Cincinnati (center) holds elaborate, diamond-studded wristwatch which Nelson S Knaggs, vice-president of The Hilton-Davis Chemical Company, (left) will present as gift of the city to King Mahendra of Nepal. The watch was created by the Gruen Watch Co, whose production manager, William Dolan, is also shown. Mr Knaggs, who was appointed special envoy for the presentation by Mayor Taft, will also make a movie of the Nepalese mountain kingdom, a privilege rarely accorded foreigners.

Historical Views of Wet Processing

J H Villard, Inc, 175 Fifth Avenue, New York 10, NY, has a collection of ancient views of wet processing in earlier days (16th to 19th century). These may be purchased or rented for contrast advertising, decorative uses and for murals.

Obituary

LEO WALLERSTEIN, founder and board chairman of Wallerstein Company, Inc and head of Wallerstein Laboratories, died Tuesday morning, November 6, 1956.

Mr Wallerstein, renowned for his many contributions in the application of enzymes to a wide variety of industrial uses, was probably best known for his original discoveries of the enzymatic process for chillproofing and stabilizing beer.

In 1902 he joined his brother, the late Dr Max Wallerstein, in establishing the Wallerstein Laboratories, which at that time acted chiefly as consultants and analytical chemists for the brewing industry. From modest beginnings, the organization grew to its present position of leadership in the highly specialized field of industrial enzymes. Today, the Wallerstein Company occupies a 15-acre plant in Staten Island and has plants also in Canada, Mexico, and England. In addition to extensive laboratories in Staten Island, it has offices and laboratories in mid-town Manhattan at 180 Madison Avenue.

CSI-Uster Agreement

Custom Scientific Instruments, Inc and Uster Corporation have entered into an agreement on the Custom Tension Recordograph, formerly known as the High Speed Recording Tensiometer. Uster Corporation will be sole distributor for the Custom Tension Recordograph. The unit was developed by Celanese Corporation of America and manufactured by Custom Scientific Instruments, Inc.

New Cosa Sales Rep

The Textile Division of Cosa Corporation, 405 Lexington Ave, New York, NY, has announced the appointment of a new sales representative for the Carolinas and Virginia area. Ralph Gossett & Co, 314 E Coffee St, Greenville, SC, will represent Cosa's line of textile machinery including dryers, tenters, moisture controllers, roller bearing inserts and spindles.

NYPC Meeting

The New York Pigment Club, at its November meeting at Fraunces Tavern, NY, heard Richard Ward, Switzer Bros Co, speak on "Photometric Measurements of Daylight Fluorescence."

J T Baker Dedicates New Research Lab

A new research laboratory building for the J T Baker Chemical Company was dedicated on October 26th. The facilities are designed to help the company maintain its position in the field of purity reagents and chemicals and to expand its current program of industrial chemical development.

Gov Robert B Meyner formerly opened the laboratory, and Prof Arthur C Cope, chairman of the Department of Chemistry, Massachusetts Institute of Technology, gave the dedicatory address. Guests then inspected the laboratories. In addition to scientific guests from other areas, members of the Lehigh Valley Section of the ACS attended. The following day there was open house for employees of the company and their families, and local business people.

The 60 x 150 foot building has more than 20,000 square feet of floor space available for laboratories, services, research library, and for the offices of the Research Division and *Chemist-Analyst*. Facilities are provided for a research staff of sixty.

There are fifteen separate laboratories, each approximately 450 feet square. Several individual laboratories are equipped for organic exploratory work, and are provided with distillation assemblies for purification of organic intermediates. Another laboratory has extensive special equipment designed for polymerization studies.

Five of the laboratories are especially fitted for various inorganic research projects. A Special Equipment laboratory provides space for assemblies that are too large or heavy for the usual laboratory. The instrumental laboratories are well equipped for physico-chemical studies, and with associated laboratories can carry out analyses of a nonroutine nature including both micro-organic and inorganic determinations.

Each individual laboratory provides a special ventilated hood, floor-to-ceiling equipment rack, and space for specialized equipment. Many safety features are incorporated.

All service piping and exhaust ducts are located in enclosed chases which are accessible from the corridors. Central dishwashing, a central stockroom, and a separate storeroom for solvents are available.

The library maintains close to 10,000 volumes in the field of chemistry and allied sciences.

J T Baker's research program is headed up by George E Ham, director of research. E C Larson is vice president and technical director.

Gov Robert B Meyner of New Jersey turning the key to formally open the new Research Laboratories Building of J T Baker Chemical Co. Looking on are (l to r): M W Smith, president, J T Baker Chemical Co; E L Mabry, president, Vice Chemical Co; E C Larsen, vice president and technical director, J T Baker Chemical Co; George E Ham, director of research, J T Baker Chemical Co; and Arthur C Cope, head, Chemistry Department, Massachusetts Institute of Technology.

Hand-washable Faille Fabric

Faille fabric, for the first time, has been made completely hand-washable through a new Redi-Set finish developed after many months of intensive research by Northern Dyeing Corporation, Washington, NJ, it is claimed.

Frank J Percarpio, president of Northern Dyeing Corporation, in making the announcement on October 29th said, "We are proud to be the first to develop this achievement and guarantee that faille treated with Redi-Set is hand-washable up to 120° F with a maximum of 3% residual shrinkage in normal hand ironing."

It is believed that faille treated with Redi-Set will soon be available to consumers through ready - to - wear merchandise and over - the - counter goods.

Appropriation for New LTI Building

Gov Christian A Herter has signed into law the Commonwealth of Massachusetts' appropriation of $2,108,000 for a new four-story building at Lowell Technological Institute, which will primarily house the electronic and plastics engineering departments and general engineering laboratories.

Construction is expected to start within a very few months. The building will extend along the south side of the campus on Riverside street at the east side of Textile avenue and will abut the recently-dedicated Olney Hall.

New Ciba Scholarships

Two $500 scholarships in textile chemistry have been presented to Clemson College by Ciba Company, Inc, of New York.

The awards send textile school scholarships at Clemson over the $25,000 mark each year. Textile grants now number 46 and total $25,450 annually.

The Ciba scholarships will be awarded to a junior and senior with consideration for financial aid and consistently high grades in textile chemistry. The awards are limited to male students.

General Calendar

AMERICAN ASSOCIATION FOR TEXTILE TECHNOLOGY, INC

Dec 5 (Meeting at the Vanderbilt Hotel, New York, N Y).

AMERICAN OIL CHEMISTS SOCIETY

Spring, 1957 (Spring meeting, New Orleans); Sept 30-Oct 2, 1957 (Fall meeting, Cincinnati); Apr 21-23, 1958 (Memphis); Oct 20-22, 1958 (Chicago); Spring, 1959 (New Orleans); Fall, 1959 (Los Angeles).

AMERICAN SOCIETY FOR QUALITY CONTROL

Feb 25-27—7th Annual Conference of the Textile Division, Georgia Tech, Atlanta, Ga.

THE DRYSALTERS CLUB OF NEW ENGLAND

Jan 21 (Hotel Somerset, Boston); Apr 26 (Hotel Vendome, Boston); June 21 (Annual Outing—Wachusett Country Club, West Boylston, Mass).

THE FIBER SOCIETY

Spring Meeting—May 1-2, 1957, The Clemson House, Clemson, S C

NATIONAL COTTON COUNCIL OF AMERICA

Feb 28-Mar 1 (Cotton Research Clinic, General Oglethorpe Hotel, Savannah, Ga).

PHI PSI FRATERNITY

April 25-27—Annual meeting, New Bedford Hotel, New Bedford, Mass.

TEXTILE QUALITY CONTROL ASSOCIATION

March 28-29 (Spring Meeting, Clemson House, Clemson, SC)

• NAMES IN THE NEWS •

Kinch

Ashcroft

Max

Sponagel

Abate

Hawkins

The Kenyon Piece Dyeworks, Inc, has named **Fred C Kinch** to the position of assistant superintendent of their plant at Kenyon, RI.

Mr Kinch's previous affiliations in the finishing industry include the past four years as Southern New England representative for the Althouse Chemical Co, Reading, Pa, prior to which he was superintendent of Topsall Dyeing Co, South Attleboro, Mass, and previously superintendent of dyeing for United Merchants at the Fall River, Mass, plant.

A Griffin Ashcroft has joined the staff of Arthur D Little, Inc, consulting research company of Cambridge, Mass.

Mr Ashcroft was vice president and director of research and development of Alexander Smith & Sons, Inc, for over twenty years. He will be located in the New York City office of Arthur D Little, Inc.

George Henry Davis, a dye expert with the New York Customs Laboratory for almost 34 years and a foremost authority on coal-tar dyes, has retired from government service. Prior to his entrance in the Customs Service he worked with Kalle & Co.

Arthur F Goetz, formerly with Colgate Piece Dye Works, Hawthorne, NJ, will replace Mr Davis.

The chemical department of McKesson & Robbins, Inc, has established a new sales district covering the New England states with offices at 68 Traverse Street, Providence, RI.

William J Blackmore has been appointed district manager and **M H Lord**, operations manager. Mr Blackmore will continue as manager of the John D Lewis Co branch in Providence. **Gilbert D Miller** continues as branch sales manager. A second branch in the new district is located at 79 Milk Street, Boston, with **William A Larkin** serving as manager.

F Max, vice president and general manager of Toms River Division, Toms - River - Cincinnati Chemical Corp, retired on October 1st, at which time **Robert K Sponagel**, formerly chemical director of the Division, assumed his new office of vice president in charge of production and chemical research and development.

Dr Max started his career in 1918, when he received his doctorate in organic chemistry at the University of Breslau. For two years he was an instructor in organic chemistry at his alma mater and in 1920 he joined the Ludwigshafen Works of the Badische Aniline and Soda Fabrik. In 1928 he came to the United States and became plant manager of the Grasselli Plant in New Jersey and assistant vice president of General Aniline Works. From 1942 to 1948 he was associate director of research of the Central Research Laboratories of the General Aniline & Film Corporation at Easton, Pa.

He joined Ciba States Limited in 1948 and was appointed general manager of the Toms River Division when it started operations in 1952. In 1955, when Toms River-Cincinnati Chemical Corporation purchased the plant, he was appointed vice president and general manager of the Toms River Division.

Dr Max will continue his connection with the company as a consultant.

Dr Sponagel, after two years with the Societe de la Viscose Suisse, joined Ciba Limited, Basle. He came to the United States in 1950, joining the Toms River Division of Ciba States Limited and in 1954 was appointed chemical director.

Edmund M Buras has joined the staff of Harris Research Laboratories, Inc, research consultants to the textile and allied chemical industries. He will supervise research on protein fiber developments. Previously, he was with the Southern Regional Research Laboratory, USDA, in charge of chemical modification of cotton.

Wyandotte Chemicals Corp, Wyandotte, Mich, has announced the appointment of **Frank M Abate** as resident sales representative in the Cleveland, Ohio, area for the Michigan Alkali Division; the promotion of **Lyle B Hawkins** to technical assistant manager of the new products organic chemicals department, M A Division; and the appointment of **Kurt C Frisch** as director of application research in the research department.

Previous to joining Wyandotte, Mr Abate was an industrial sales engineer for the Alemite Co.

Mr Hawkins, who was formerly a senior sales representative in the Cleveland area, will help facilitate the transfer of products from the research and development division, assisting the introduction of new organic products to industry.

Dr Frisch succeeds **Maurice G Kramer**, who now holds the same post in the new research facilities of the J B Ford Div. Dr Frisch was formerly manager of polymer research.

Charles L Zimmerman has been named assistant director of research for Dan River Mills. He assumed his new duties on Monday, November 5.

Mr Zimmerman had been associated with the American Cyanamid Company in Bound Brook, NJ, since 1942. He has held a number of important research posts with that company, the most recent being head of dye application research.

Mr Zimmerman was the 1954 recipient of the American Dyestuff Reporter Award.

Arthur E Mitchell, formerly with United Aniline Co, has joined Sou-Tex Chemical Co, Inc, Mt Holly, NC, as sales representative for the Southern states.

Sou-Tex manufactures textile auxiliaries under license from Cassella Farbwerke Mainkur, Frankfurt a/M, Germany.

Olson

Warner

Berle

Moessinger

Sack

Fusaro

Gray

Harry G Olson, Warren C Gray, and Donald G Warner, all associated for many years with Taylor Instrument Companies, Rochester, New York, have received positions of increased responsibility. Mr Olson has been named divisional sales manager in charge of industrial instrument sales to processors in the textile, air-conditioning, refrigeration, and metals industries. Mr Gray becomes home-office divisional sales manager in charge of instrument sales to processors in the chemical and paper industries. Mr Warner now heads up the company's branch in Greensboro, NC, where much of his work will deal with control instrumentation in textile plants.

Hillary Robinette, Jr, president of Robinette Research Laboratories, Inc, Ardmore, Pa, addressed the 29th Congress of the French Society of Chemical Industries in Paris, France, on November 23rd.

Mr Robinette represented the textile chemical field in the United States when he presented his paper, "Recent Developments in Textile Wet Processing and Finishing."

Fabric Research Laboratories, Inc, Dedham, Mass, has appointed Leo Barish to the position of research associate.

Mr Barish, who has recently finished his military service with the United States Army in England, was previously employed by the Dartmouth Finishing Corporation in New Bedford, handling laboratory work in color-cost finding.

D I Randall has been named to a newly created position of product line manager for vat colors in the Dyestuff and Chemical Division of General Aniline & Film Corp. Dr Randall, formerly technical assistant to the divisional sales manager, will coordinate and direct all activities for vat colors.

Charles H Berle has been named special projects coordinator in GAF's Dyestuff and Chemical Division. He was formerly manager of the Niagara Falls plant of the International Minerals and Chemical Corp, where he directed the production of chlorine caustic, potash and their derivatives. Mr Berle will make his headquarters at the Division's headquarters at 435 Hudson St, New York, NY.

GAF has announced also the appointment of John C Moessinger as foreign representative. In his new position, he will be concerned with all the Corporation's foreign sales activities. He will operate under the direction of F M Meigs, general manager of foreign operations. Dr Moessinger was previously manager of technical services at GAF's Rensselaer, NY, plant.

Theodore Morel has joined Mona Industries, Inc, Paterson, NJ, as chief chemist. Primary responsibilities will include heading the research department and supervising the chemical phase of plant operations. Dr Morel was formerly connected with Chemical Research Associates in Bernardsville, NJ.

A N J Heyn, Clemson College professor of natural and synthetic fibers, has been elected a fellow of the American Association for the Advancement of Science.

The fellowship, announced in Washington, DC, was the second high honor received in one week by Dr Heyn. He was also presented membership in the New York Academy of Science, a national organization. Recently, he was named to "American Men of Science" and "Leaders of Science in the South."

Dr Heyn, a Clemson College faculty member for eight years, is the author of 50 major publications since 1929.

Sharkey

Emery Industries, Inc, Cincinnati, has announced the appointment of H Joseph Sharkey to its research staff, Joseph Z Sack to the South Central sales territory, and A C Fusaro to the position of assistant director of advertising.

Dr Sharkey, who was recently a research fellow at Oregon State College, will be associated with the Organic Research Section under the direction of C G Goebel.

Mr Sack will be responsible for the sale of Emery's complete line of fatty acids in the territory which includes: Missouri, Kansas, Colorado, Nebraska, Oklahoma, Arkansas, Texas, western Louisiana, southern Illinois, and western Tennessee.

Mr Fusaro, who joined Emery in 1947 as a member of the technical staff, has been associated with the advertising department since 1950, where he handled the advertising for Emery's Chemical Division. In his new position he will assist in the supervision of all Emery advertising at the local and national levels.

Colgate-Palmolive Co recently announced the promotion of Jack V Schurman to Division Head in the Research and Development Department. William G Alsop succeeds Mr Schurman as group leader in exploratory organic chemistry.

Now in charge of the Physical Chemistry Division, Mr Schurman joined the Colgate-Palmolive Company as a research chemist in 1950 and became group leader in 1954.

Dr Alsop joined Colgate-Palmolive in 1941 and later became a research chemist in the Exploratory Organic Division. Now group leader in exploratory organic chemistry, Dr Alsop has several patents to his credit.

cinnati,
nt of H
h staff,
Central
to the
adver-

ently a
te Col-
th the
der the

ble for
line of
which
lorado,
kansas,
uthern
ee.
ery in
chnical
th the
1950,
ing for
is new
super-
at the

ly an-
ack V
he Re-
tment.
Schur-
ratory

nysical
urman
Com-
n 1950
54.
molive
search
rganic
n ex-
, Dr
credit.